Risk, rationality and misfortune : towards a sociology of accidents.

Green, Judith

RISK, RATIONALITY AND MISFORTUNE: TOWARDS A SOCIOLOGY OF ACCIDENTS

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Judith Maureen Green

United Medical and Dental Schools of Guy's and St. Thomas's Hospitals

ABSTRACT

In the late twentieth century, a wide range of misfortunes are classified as accidents, yet there has been little sociological research on how these classifications are made. This thesis contributes to an understanding of the social construction of accidents.

It is first argued that a discourse about accidents emerged in the West in the early twentieth century, in which the accident was definitive of rationalist modernity. Accidents were the misfortunes on the margins of determinist and stochastic explanatory systems; events caused by coincidences that were inexplicable at the level of personal misfortune, if predictable in general.

With the fracturing of any consensus about rationality by the middle of the twentieth century, the place of accidents shifted radically. Accidents became the point of articulation of a new discourse: that of risk and its calculation. As it became possible to construct the accident as a preventable event which should not happen, 'accident prevention' could emerge as a discrete professional activity. Accidents became the paradigmatic challenge for risk assessment and, as individual misfortunes, merely evidence of a failure of such assessment.

A case study of a coroner's court and data from qualitative interviews suggest that accidents are produced through a moral enquiry in which they are separated from other, more culpable misfortunes. An accident is defined not by what it is, but by what it is not. Such classifications are inevitably provisional, pending (potentially) infinite further enquiry. An 'ideal' accident, one which is unmotivated and unpredictable, only happens in abstract or hypothetical contexts. In practice, accidents are constructed, understood and prevented through the analysis and mapping of risks.

Accidents remain a key element in our classifications of misfortune but, as ambiguous and negotiable outcomes, they are inscribed with a range of other contemporary concerns of uncertainty, responsibility and culpability.

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RISK, RATIONALITY AND MISFORTUNE: TOWARDS A SOCIOLOGY OF ACCIDENTS

CHAPTER ONE

INTRODUCTION

In one of his essays on Three forms of sudden death, the pathologist Gonzalez-Crussi describes a bizarre accident that caused the death of several homeless men in the subways of New York City's underground train system:

> With their bladders full to capacity...they had released a stream of urine, which formed a continuous arched jet between their bladders and the train tracks. As soon as the stream touched the tracks, the thousands upon thousands of volts of electricity needed to move New Yorkers around, conveniently harnessed in the tracks, found an alternative route in the salt-rich fluid, and flowed for a fraction of a second into the body of the unwary vagrants.
> Diagnosis: struck by lightning, underground. (Gonzalez-Crussi 1986:66-7)

Every unexpected death in New York City, like other modern cities, has to be classified as one of three classes; suicide, homicide or accident, 'the mark', says Gonzalez-Crussi, respectively 'of dishonor, pity or indifference impressed upon it by the living' (ibid: 65). He is struck, though, not by the bizarre way in which these men met their death, but by the reaction to it of the living, which was not indifference but 'a certain sanctimoniousness, a certain urge to remonstrate that all

was as it should be, that death by electrocution was a means of divine reproof' (ibid: 69).

Accidents are an important category of modern misfortunes. They include dramatic deaths such as the one Gonzalez-Crussi describes, but also more mundane, everyday misfortunes such as the scraped knees of childhood or crockery broken in a slip in the kitchen. Indeed, accidents cover a seemingly infinite range of possible misfortunes. As a description, accident is used synonymously with 'injury' ('an industrial accident'), as a term denoting lack of intent ('it happened by accident') and as a sign of the ultimately uncontrollable nature of the material world ('accidents will happen'). Milk is spilt, a car crashes, a woman unintentionally becomes pregnant, a small boy wets himself. Accidents will happen, and presumably the misfortunes (and, occasionally, happy events) which we label accidents always have happened.

There are many bodies of knowledge which refer to accidents. Many of these attempt to impose some order on the apparent chaos of accidents as a 'lay' category of misfortune. Legal discourse, for example, attempts to specify the duties of certain kinds of people to prevent accidents happening and to identify what redress can be sought if these duties are breached. As such, it is very much a professional discourse:

> principles of duty, breach and damage... are legal constructs which do not always correspond with ordinary and 'common sense' conceptions of the 'causes' of accidents and attributions of fault by the injury victim (Genn 1987:4)

Medicine, too, has developed bodies of knowledge about accidents which concern the distribution of accidental injuries, the treatment of those injuries and, more recently, how they should be prevented. Legal and medical discourses intersect in forensic medicine, which attempts to identify fatal accidents retrospectively from the patterns of wounds and other signs they leave on the body (Simpson and

Knight 1985:68). As well as these professional discourses on accidents are what could provisionally be called 'lay' ones: the everyday talk about accidents and what causes them.

If the ubiquity of accidents and talk about them is not justification enough for a sociological study, then the seriousness of accidents as a cause of death, disability and distress surely is. Accidents were found to be the cause of 17,000 deaths in England and Wales in 1991 (OPCS 1993). It has been estimated that some 10,000 children each year are permanently disabled by accidents (CAPT 1989) and that each year around one in five children need hospital treatment for accidental injury (Sibert et al 1981). Minor accidents, causing distress or pain at the time, are perhaps a universal experience.

This study is not, though, just about injuries. It takes as a starting point a paradox evident in Gonzalez-Crussi's essay. On the one hand, he implies, accidents are a matter of indifference: they are unforeseen occurrences, misfortunes which 'just happen', which cannot be helped and for which therefore no one can be blamed. On the other hand, accidents are at the centre of moral debate: although they 'just happen', some people are seen to deserve them.

Further, although the misfortunes we label as accidents may always have happened, it is not clear that they have always been labelled as 'accidents' or understood in the ways we understand them. Evans-Pritchard, for instance, in his account of Azande cosmology (Evans-Pritchard 1937), described a belief system within which accidents cannot happen, because all misfortunes are potentially attributable to witchcraft. Mead (1931), in her account of childrearing in Manus culture, similarly described a social system which can allow no 'accidents', here because of what she saw to be the physical dangers of the environment, rather than any all embracing cosmology:

> The Manus world, slight framework of narrow boards above the changing tides of the lagoon, is too precarious a place for costly

> mistakes. The successful fashion in which each baby is efficiently adapted to its dangerous way of life is relevant to the problem which parents here [North America] must face as our mode of life becomes increasingly charged with possibilities of accident (Mead 1931: 5)

A combination of early discipline and refusal to sympathise with the accidental outcomes of clumsiness ensured, claimed Mead, that the children of the Manus grew up 'physically dextrous, sure footed, clear eyed [and] quick handed' (Mead 1931:21). Mead's suggestion that Western children might benefit from a similar upbringing to protect them from accidental harm has not been adopted. As this study will argue, the prevention of accidents in contemporary Britain is centred on a very different understanding of what constitutes a risk and how it should be managed.

Apart from anthropological accounts of other cultures, which demonstrate that it is not inevitable that some misfortunes will be seen as accidents, sociology has largely ignored accidents as a legitimate object of study. However, another cause of sudden death, suicide, has been the subject of considerable interest. Durkheim began his classic study of Suicide by noting:

> Since the word "suicide" recurs constantly in the course of conversation, it might be thought that its sense is universally known and that definition is superfluous...if we follow common use, we risk distinguishing what should be combined, or combining what should be distinguished, thus mistaking the real affinity of things (Durkheim 1963:41)

In 1991 accidents accounted for more than three times as many fatalities in the Registrar General's annual returns for England and Wales than suicides (OPCS 1993) and the word recurs far more often in the course of conversation, but they have received relatively little attention from sociologists. Is it possible to follow

Durkheim's advice, and start by outlining some definition that will discover the 'real affinity' of those disparate events we call accidents?

What is an accident?

The word 'accident' is widely used, far more so than 'suicide', in everyday conversation, but it refers not only to the fatalities recorded by the Registrar General, but also to a wide range of other, everyday misfortunes. That the word 'accident' describes such a seemingly disparate range of events poses the first challenge for a sociology of accidents. Defining the field of study by first discovering the 'real affinity' between these events is problematic: there are no obvious dimensions along which a classification could be developed. To begin, then, it might be more useful to start with a tentative working definition based on everyday usage, rather than attempting an 'objective' classification.

In everyday usage, accidents form a heterogenous and loosely defined category of events. First, categorising a misfortune as an accident combines two rather different senses of the word. The first is that of a category of events which are called 'accidents' to indicate the type of outcome. Car crashes and childhood injuries are examples. The work colleague who comments that she 'was involved in a car accident yesterday' or the parent who says 'my daughter had an accident at school today' is marking the event in terms of its outcome: perhaps damage to the car, or injury to the person. Second, though, an event is defined as an accident not just by its outcome (such as a death, injury or material damage) as the same outcomes can be produced by events that are defined in other ways, such as homicide, war or wilful damage. It is the process preceding the outcome which is critical. Accidents are defined through their ascribed cause, or rather, lack of cause. We do not decide that an accident has occurred by observing what happened, but by investigating how it happened. There are two factors which apparently characterise the process by which accidents are seen to occur. The first

is that an accident should be an unmotivated event. Neither the victim nor any other agency, human or divine, willed it to happen. Ironic usage clearly illustrates this: 'The Accidental Death of an Anarchist' (Fo 1980), 'we could arrange for you to have an accident'. In general no-one can be blamed for an accident. It is this feature which distinguishes accidents from wilful damage and neglect. The arrangement of physical objects and temporal sequences that precede an accident must be seen to be purely coincidental: they cannot have been willed. The causation of accidents is arbitrary and not logical.

Second, and following from this, an accident is unpredictable as a unique event. Although the epidemiology of accidents can be mapped through aggregation and examination of their incidence, the occurrence of a particular accident cannot be foreseen. The victim, in an ideal accident, has no previous knowledge of the misfortune and therefore cannot be held responsible. From an early age we learn to negotiate claims to the accidental in order to claim or disclaim responsibility: anyone caring for children will recognise the bid for clemency 'I didn't do it on purpose - it was an accident'.

It is soon apparent, though, that this working definition applies only to an 'ideal type' of accident. Not all accidents are held to be unwilled and unpredicted. There are many events which are defined as 'accidental' in which some blame is apportioned: road traffic accidents caused by a driver over the legal alcohol limit, or falls over loose paving stones which should have been maintained by a local authority. The status of an event as accidental is often provisional: misfortunes are only accidental until responsibility can be apportioned. Even a brief review of media images of disasters (the 'accidents' which affect many people) demonstrates how the definition is negotiated rather than given, with different parties sometimes in open conflict over how a particular event should be categorised. Folk wisdom recognises the ambiguity in phrases like 'it was an accident waiting to happen'.

Possibilities for a sociology of accidents

In everyday discourse, then, there appears to be an 'ideal type' of accident. It is usually a misfortune, and one which is characterised by being both unmotivated and unpredicted. Accidents are common misfortunes, with which all people in modern Britain have some familiarity, and they are discussed frequently in both private and public discourse. There are several questions raised by this which could potentially be addressed by a sociology of accidents. There are social structural questions about the distribution of such misfortunes: do they affect certain classes of people more than others? There are cultural questions, concerning the mechanisms that exist in contemporary British cultures which deal with accidents: how do we cope as individuals and as a society with those misfortunes which have been defined as accidents? It could be argued that other disciplines (perhaps epidemiology or psychology) are better placed to conceptualise accidents, but these are classic sociological questions and there has been little work which explicitly addresses them. This raises a further issue of explaining this comparative neglect. Why is there an established sociology of suicide, a growing sociology of death and a more general sociology of health and illness, yet no recognisable sociology of accidents? This thesis will examine first some of the literature which does refer to accidents to explore some explanations of their marginality in sociology.

It seems, though, that before an adequate sociology of accidents could be developed, a more fundamental question should be addressed. This is: how do we construct the category of 'accident'? How do some misfortunes become classified as accidents, and others not? It is perhaps a truism to note that the accidental, like any other category, is a socially constructed one. Accidents are so often taken as 'givens', though, or inevitable features of the universe, that it is perhaps worth stating the social construction of their classification as a starting point. There is no natural category of events which are accidents. In modern cosmologies, certain misfortunes are selected and described as such and others not. These selections,

like any others, are made through the process of social interaction. As we have seen already, defining an event as an accident is a process of negotiation and sometimes open contestation. Although some formal rules exist for deciding what is to count as an accident (such as medical definitions, or legal rulings) even these are the outcomes of continuous social negotiation. This study is concerned with how the formal and informal rules for classifying some misfortunes as accidents have emerged, how they might operate in contemporary culture and how an understanding of these classifications might illuminate the study of other contemporary discourses. As such, it is essentially an exploration of a modern classification of misfortune.

In summary, the aims of this thesis are first to account for sociology's neglect of the accident as a key element in contemporary cosmology and then to go on to provide some suggestions as to how a sociology of accidents might develop. The methodologies used are necessarily diverse, as the intention has been to discover 'clues' to how accidents are socially constructed. These clues have emerged through a review of writings which address accidents and related themes, observations of key sites at which accidents are produced (such as coroners' courts) and interviews with various social actors who engage in talk about accidents. These include people who have some legitimated 'expert' role (such as a health visitor with responsibility for child accidents and an actuary who contributes to how insurance companies view accidents) and those who are the subjects of accident prevention. The methodologies used are described in more detail at appropriate points.

CHAPTER TWO

LITERATURE REVIEW

INTRODUCTION

The previous chapter suggested that an initial working definition of 'accident' might be that of an unmotivated and unpredictable misfortune. There are several professional literatures which address the subject of accidents, and in some way each refutes one aspect of this lay definition.

The first body of literature reviewed is that of medical nosology. In Britain, the Registrar General's classification of diseases has, since 1839, formally labelled some injuries as accidents. Although one facet of the nosological categorisation of accidents has been the attempt to place accidents in terms of their medical outcomes, and thus to provide a pattern by which these disparate injuries could be understood, a second facet has been the implicit acknowledgement that accidents are essentially a lay category, defined by dimensions other than those of medical outcome. The inclusion of accidents in nosologies was an essential precursor of epidemiological enquiry into accidents, which by definition rejected the 'unpredictable' nature of accidents. Through epidemiological mapping accidents reveal underlying patterns, and can thus be brought within a rational discourse of statistical predictability. But in this medical literature on accidents lies a paradox: accidents are first caught and placed in nosological tables and mapped through

epidemiology, yet simultaneously they remain examples of what is unclassifiable, they are the 'left overs' of a rational medical discourse.

Another professional discourse on accidents is the Freudian approach, which challenges the other aspect of lay definitions: that of motivation. Freud explicitly rejected the notion that accidents were unmotivated, arguing that apparently meaningless events could be the outcomes of unconscious desires or conflicts.

Turning to sociology, there has been little work that has addressed the social construction of accidents. Sociological study has tended to take the accident as a given, and the concern has been with how they are caused or how we react to them. The sociology of health and illness has only been concerned with accidents tangentially, as marginal cases of disease, although the literature provides some useful theoretical approaches for a possible study of how accidents are socially constructed. Although the sociology of health and illness has arguably taken its lead from medicine in its marginalisation of accidents as legitimate objects of study, a more salient reason for this neglect lies perhaps in the historical concerns of social theory, which have been largely in the arenas of social life that are both patterned and motivated. As the accident is constructed as neither, it has had little place. More recently, sociological theory has focused on chance as a legitimate area of enquiry, most notably from a 'post-modern' perspective. Accidents, in that they are constructed as a paradigmatic 'chance' event, therefore become a legitimate subject of study.

THE ACCIDENT AS INJURY: MEDICAL NOSOLOGY

Introduction

Although the misfortunes described in everyday life as 'accidents' produce a range of outcomes (a broken cup, a pregnancy, a wet toddler) it is accidents which cause

injuries that have perhaps attracted the most attention, in both epidemiology and sociology. Accidents became a focus of a specifically 'professional' epidemiological interest in the middle of the twentieth century, when accident prevention emerged as a public health problem. The rise and implications of accident prevention are examined in Chapter Five. Until the 1950s, though, accidents were largely neglected as a discrete subject of study by medicine. As the medical historian Roger Cooter has noted, there were few calls for specialist treatment for accidental injuries before the first world war, and little action until afterwards (Cooter 1993:80). Another historian, in reconstructing the history of violent death in Philadelphia, complained of accidental injury that 'nothing relevant has been written about its history or sociology, and the sources are nearly as brief as the bibliography' (Lane 1979:35). If medicine had little interest in the treatment or prevention of accidents until recently, the development of comprehensive mortality statistics did necessitate some interest in their classification as a cause of death. The development of nosology, and the inclusion of accidents as a separate cause of death in medical statistics, provides one source of information on how accidents have come to be defined as medical misfortunes.

The Registrar-General's classification

Even in restricting its interest to those accidents which caused injury and death, medicine was faced with a challenge in imposing order on a seemingly disparate set of causes and outcomes. In Britain, the cause of death first had to be registered in 1838. The first Registrar General's report of the following year listed the following causes among the 4,845 deaths which were classified as 'Deaths by Violence': choking on blackberries; being struck by lightening; drinking boiling water; bites by a ferret, a lion and a donkey; pit explosions; emphysema following a fall and inflammation following a prick from a thorn.

This heterogeneity was a problem, given the aim of the first Registrar-General to present causes of death as facts as scientific in their arrangement as any other which 'admit of numerical analysis' (Registrar General 1839:63). In an appendix, the first statistician to the Registrar General, William Farr, wrote:

> Medicine, like other natural sciences, is beginning to abandon vague conjecture where facts can be accurately determined by observation; and to substitute numerical expressions for uncertain assertions...the physicians of this century will be saved from the fallacies of partial generalisation (ibid:64)

The 1839 report commenced with the hope that it 'will not disappoint the expectations of those who hope to derive, eventually, from that source, materials of vast improvements to the advancement of the Science of Vital Statistics' (ibid:8). In order to provide such material, Farr outlined the classification to be used for arranging deaths by cause (see Fig 1). The main division was between External and Internal causes:

> two classes, passing into each other, but as distinct as day and night; the first class comprising all that can be referred to external violence, suffocation, poison, lightning, and fire; the second, such as under certain circumstances spring up spontaneously in the organism, and are represented by inflammation, cancer and rheumatism (Registrar General 1839:65).

There is clearly a concern that the new rational science of vital statistics does not provide explanation for all causes, and that as many as possible are brought within the remit of rational explanation. Farr noted, for instance, that many of those recorded as simply 'Sudden Deaths' may obscure 'a certain number of cases of poisoning which escape undetected by the coroners and the juries' (ibid:75). There was also a concern that the classification system would itself produce the kind of data that were amenable to interrogation for patterns. There should not,

claims Farr, be too much refinement in the classes used, because if they are too exactly defined 'no general principles can be deduced from small numbers; accidental irregularities destroying the results, according to the well known doctrines of probability' (ibid:70). The causes of death that were to become classified as accidental, like other 'external' causes of death, are merely grouped together, with no attempt to classify them further.

Figure 1 Farr's classification of diseases, 1939

EPIDEMIC, ENDEMIC AND CONTAGIOUS DISEASE
(eg cholera, dysentery, small pox, plague)

	-	**OF THE NERVOUS SYSTEM**
	-	**OF ORGANS OF RESPIRATION**
	-	**OF ORGANS OF CIRCULATION**
SPORADIC	-	**OF ORGANS OF DIGESTION**
DISEASES	-	**OF URINARY ORGANS**
	-	**OF ORGANS OF GENERATION**
	-	**OF LOCOMOTION**
	-	**OF THE INTEGUMENTARY SYSTEM**
	-	**OF UNCERTAIN SEAT (eg gangrene, epitaxis, dropsy, atrophy)**

DEATHS BY VIOLENCE

The external causes were at this stage divided into Intemperance, Starvation and Violent Death. The 'Violent Deaths' proved problematic. They were left over from other, more homogenous categories, grouped merely by fact that death was caused by what Farr called 'impressive external causes' (Registrar-General 1840:7), rather than by any biological processes or sites of anatomy. However, Farr noted that the lack of any analysis of the sudden deaths was a shortcoming of his embryonic system:

> The violent deaths are extremely numerous and will perhaps lead to a general enquiry into their causes, - drownings, fires, accidents

> with machinery, the bursting of steam-boilers, explosions in mines, and poisons, which can be procured of the most destructive and subtle nature, with extraordinary facility (Registrar-General 1840:7-8)

In the same vein, Farr also listed particular causes of death from want of food and from cold, noting that these were 'in some instances the effect of accident, but more frequently of destitution' (ibid:7). Further analysis and classification, he implied, would render even this group of random, individual misfortunes as 'scientific facts'.

Indeed Farr's developing classification for deaths suggested that most were now much more than individual and disparate misfortunes. Like the rates of births and marriages, the distribution of causes of death formed a pattern from which underlying laws and regularities could be deduced. In 1848, one Registrar's introduction to the annual report claimed that 'The fluctuation in the marriages of a country expresses the views in which the great body of the people take of their prospects in the world' (Registrar-General 1848:ix), and went on to review changes in the marriage rates from 1754 to 1845 by linking them to the changing economic fortunes of the country. The same introduction noted the regular effects of temperature on the death rates, noting that a fall in mean temperature destroyed lives and that a mild season would save them. There was a growing confidence and optimism that the new science of statistics could provide meaning through the examination of such patterns. By 1854 even epidemics, which a century earlier had been chaotic and unpredictable visitations (Graunt 1662), found their place in a predictable pattern:

> an epidemic is invariably followed by a period of low mortality, which is again accounted for on the supposition that the weakly die of an epidemic, who under ordinary circumstances would die in a year or two years subsequently of some other disease (Registrar-General 1854:iii).

Even if the precise reasons for these short term fluctuations due to outbreaks of epidemic disease were not yet known, at least they were placed in the long term. In their heterogeneity, then, accidental deaths posed a problem for such analysis. In this 1854 report, Farr's appendix was the first time that the moral content of the accidental category was explicitly addressed. Noting that in England there had been a long tradition of referring deaths 'likely to be caused by wilful, careless or accidental violence' (Registrar-General 1854:129) to the coroner's court, in order to distinguish those deaths for which there was some culpability from others, he went on to suggest:

> Some of the external causes that in too many instances are fatal are wilfully or negligently set in motion by men, and the act is homicide or suicide. This subject deserves to be fully investigated, for the mental states appear to admit to a large extent of moral and physical control (ibid:136).

In the absence of any apparent anatomical or pathological pattern, this moral content of the class of 'violent' causes of death provided a possible organising principle, for now they too could be classified into discrete groups. Accidents did not fit well into the now well established nosology based on anatomy and function, but could be ordered around an examination of the intentions of the victim or others. The fatal medical sequelae of accidents were thus classified initially not by the part of body affected, or by the extent of disablement of a physical function, but by a moral judgement. In the 16th Report (Registrar-General 1856), following international standardisation from the first Statistical Congress in Brussels which intended to institute commonly agreed diagnostic criteria and labels as well as classifications, Farr introduced a new classification which divided deaths into five orders; namely:

1. Epidemic, endemic and contagious
2. Constitutional
3. Local
4. Developmental
5. Violent

In a later report, Farr noted of the last order that:

> Human agency plays so important a part in this class, that it might be made into the basis for orders. Thus a man may die 1. a glorious death in battle (pro patria mori); he may die 2. by an act of homicide (murder, manslaughter); he may die 3. ignomiously on the scaffold (execution); or 4. abandoning the post where God has placed him, he may take away his own life (suicide); 5. he may die by a surgical operation 6. he may die by accident.
> If this grouping be adopted, the mode in which the death is produced by wounds, chemical injuries, poisons, asphyxias, and mechanical forces, would form secondary heads (Registrar-General 1862:78)

These distinctions for violent deaths are based purely on the moral meaning of the death: whether glorious or ignomious; whether the victim or an other was culpable. Those with no discernable moral content are the 'left-overs', the accidents. The medical sequelae of accidents were now classified by specifying their immediate cause, but their definition mirrored lay terms. An accident was an event for which there was no motivation, but which lay on a boundary between the need for a cause (the coroner's court would be asked to attempt to provide one) and the lack of a 'real' cause as defined by the new scientific principles of statistics, which made 'accidental irregularities' themselves regular and predictable events through aggregation. From the unrefined category of external causes of death when annual statistics were first published by the Registrar-General in 1839, accidents had become the last order of medical classifications of causes of death:

those which have occurred with no known medical cause, or at least none that fits into the rational system of medical knowledge, and have no known motivated cause.

Farr's suggestion in 1840 that a 'general enquiry' into the causes of violent deaths would prove fruitful was followed. The analysis of causes of 'violent' death became more detailed over time, and accidents became distinguished from other forms of violent death. The class of accidents became more internally differentiated in official statistics. The last order of causes of death has undergone perhaps more revision than any other. The original grouping of external causes of death used by Farr in 1839 included an undifferentiated catalogue of injuries and accidents. The introduction of the first internationally agreed classification (Registrar-General 1856) brought, as we saw above, a division of violent deaths along lines of culpability. From then on, the circumstances surrounding accidental injuries resulting in death were the subject of ever more sophisticated classification techniques. This interest was at first in accidents which were defined to mirror lay terms, in that they were seen as unexpected and unmotivated events and attributions of moral responsibility were the primary axis of classification.

The problems posed by the heterogeneity of the class of accidents continued to be of concern to epidemiologists. In 1941 a report by Greenwood, Martin and Russell (1941) on deaths by violence cited changes in classification as a deterrent to analysing trends over time. They noted the increasing numbers of accidents due to motor vehicles: from two deaths registered in 1896 to 235 in the years between 1931 to 1938. One respondent to the paper, noted that 'until recent years violent deaths have been nobody's business in the official sense, apart from industrial accidents and homicide ... the Registrar-General's analyses of accidental deaths have suffered from obscurities in classification and ... have failed to provide much material for those who may have wished to study these deaths in relation to social factors' (Greenwood et al 1941). This call for more sophistication in the reporting of accidental deaths was heeded, and throughout the second half of the twentieth century accidental deaths were subject to increasingly detailed analysis. The

implications of this growing interest in the causes and outcomes of accidents are explored in Chapter Five.

Modern categories of accidental death

The modern International Classification of Disease Categories (WHO 1977) maintains in essence the original distinctions reported by Farr in 1848. Accidents remain in the last category, now Order XVII, which, unlike the other classes, is not based on a system of the body or a group of disease causing agents. Reporting on deaths in this class the Registrar General divides Order XVII, Deaths from Violence, along moral lines into deaths caused by others (homicide), deaths caused by the victim (suicide) and deaths from which no fault can be attributed: the accidents.

Up until the 9th revision (WHO 1977) of the Classification of Diseases, Injuries and Causes of Death there were two alternative series of classification codes for Order XVII (WHO 1967)*. These were designated by 'N' and 'E' numbers respectively. The series prefixed by N numbers described deaths by the nature of the injury (a fractured spine, a sprained wrist or a burn). Those codes prefixed by an 'E' described accidents in terms of their external cause; a fall, a road traffic accident and so on. After the 9th revision, the 'N' prefix was dropped as this became the main classification and the 'E' prefixed classification described a subsidiary ordering.

The primary classification by nature of injury is now similar to the other orders of the classification in that injuries are described by the area of the body to be affected. Thus, for instance, code numbers 800 to 804 cover various fractures of the skull and code numbers 805 to 809 cover fractures of the spine and trunk. This classification in essence describes the medical sequelae of accidents, making no attempt to classify accidents as such. The supplementary 'E' code classification

* The 10th revision of the International Classification of Diseases was published in 1992. It retains the two series of codes, with codes S00 to T98 classifying injury, poisoning and other consequences of external causes and codes V01 to Y98 classifying the external causes themselves. (WHO 1992)

is an attempt to describe the environmental and social contexts of the accident. First, codes are available to describe the place of the accident: E840 is an accident to powered aircraft at take-off or landing, E910 is accidental drowning or submersion. Second there are codes which refer to the physical environment: E900 is excessive heat and E906 lightning. Codes may specify whether the accident happened at work or in a private dwelling, and may give information about the presence of other people: E886 codes a 'fall..from collision, pushing or shoving' and E814 codes a 'motor vehicle traffic accident involving collision with pedestrian'. The fact that a supplementary system of classification is needed is evidence that accidents cannot *just* be defined in terms of their outcomes - they are essentially, as noted earlier, defined by reference to the way in which they were caused and even a nosological attempt to force accidental injuries into anatomical classification has to reflect this. In summary, the primary classification now describes injuries, while the supplementary classification describes accidents.

Within the subsidiary 'E' number series are three groups that indicate the moral nature of the categorisation of accidents. A death by submersion is classified not by the external cause in terms of an environment or external agent, but by the motivation of the agent. If the victim was the motivated agent, the death is coded E954: the classification for 'suicide and self-inflicted injury by drowning or submersion'. If the motivated agent is another person the classification becomes E964 - assault by submersion (drowning). If no-one can be attributed blame or moral responsibility for the drowning it is coded E910, accidental drowning or submersion. There is even a code for drownings where the motivation cannot be clearly established - code E948 - so that there is no danger of a motivation being wrongly ascribed. The series of codes E950 to E959 are used to describe suicides and self-inflicted injuries and the codes E960 to E969 are used to describe homicide and injury purposefully inflicted by another person. A third series, E970 to E978, is used to describe deaths and injuries arising from the motivated though perhaps not blameworthy actions of a human agent. These are the codes that describe injuries resulting from legal interventions, including code E978 for legal executions.

For medicine, then, the accident is not easily categorised within a nosology based on either the mapping of disease onto the body or the nature of the specific pathogen (virus, parasite, bacteria or cancer). Accidents can affect any part of the physical body, with no respect for medical framing, and they are caused by an unpredictable and potentially infinite array of agents. They are, as events, not classifiable along biomedical variables, and their medical sequelae are just as diverse. The persistence of an alternative classification testifies to their problematic nature. Prior (1989) has suggested that the relegation of 'E' codes to a supplementary classification has served:

> to place the active subject(s) in parentheses. They are an associated, but not a primary, causal agent in processes leading to death. And they are certainly not regarded as essential to either the classification of death or to understanding its nature. (Prior 1989:42)

This elision of the active subject, argued Prior, was part of a wider shift in medical discourse by which 'humanistic accounts of death were removed from the medical register and effaced from the certificates' (Prior 1989:45). However, although modern nosologies have sanitised causal accounts of death from social contexts in general, they have only partially succeeded. Some deaths, it seems, can only be recorded if we examine the moral context: whether the death was willed, and whether any human agent should bear responsibility. The persistence of 'E' codes, even if only as a supplementary classification, demonstrates this, and no 'violent' death in modern Britain is certified before a coroner's court has decided which moral class it belongs to.

Thus, accidents still form a residual category for nosology, based not on anatomy or an analysis of pathogens, but on what is 'left over'. Accidents cannot be defined purely in terms of their medical outcomes, as classification depends also on analysis of social circumstances and on culpability. Farr laid the basis for conceptualising some accidents as medical misfortunes, potentially as amenable to

statistical analysis as any other cause of death. To a certain extent, this project was successful, in that the disparate causes of 'accidental' death are now aggregated, internally classified, tabulated and cross tabulated in official publications. These tables elide the particular and unique circumstances of each misfortune, recreating it as merely an instance of a type (a road traffic accident, a head injury, a home accident). However, the active subject has not completely disappeared from these sanitised accounts of fatal accidents, in that the very designation of 'accident' [illegible] arises from a judgement about a moral context.

FREUD AND THE ACCIDENT AS MOTIVATED INJURY

If the development of medical nosology has, at least partially, undermined one assumed element of the lay construction of accidents (their unpredictability as random, individual misfortunes) then the Freudian tradition in psychological theory has challenged the other: their lack of motivation. In his work on mishaps, losses and 'slips of the tongue' (the accidents of everyday life and of speech), Freud argued that the minor mishaps that we label meaningless and accidental are signs of the ordered rational workings of the unconscious: they are only superficially 'accidental', with the real meaning lying beneath the surface to be revealed by the analyst. The most mundane of everyday mishaps can be rendered meaningful through an examination of unconscious motives:

> Whoever forgets articles in the doctor's office, such as eye glasses, gloves, handbags generally indicates that he cannot tear himself away and is anxious to return soon (Freud 1938:155f)

The 'real' meaning of this apparent accident is that the patient wishes to remain with their analyst. The losses of personal possessions dear to us are not trivial accidents but are the effects of the unconscious working out perhaps difficult

relationships or represent the manipulation of meaningful symbols. This attribution of rationality to the seemingly irrational is for Freud, and to the rationalist mind, a comfort:

> It is consoling to think that the "losing of objects" by people is merely the unsuspecting extension of a symptomatic action, and is thus welcome at least to the secret intention of the loser (Freud 1938:154)

That the inexplicable has been brought within the realm of the explicable is an advance in knowledge: for Freud, there can be no mere coincidences left to clutter a universal explanatory framework.

'Slips of the tongue', apparently accidental mistakes in spoken language, likewise reveal more meaning than the patternings of superficially correct speech:

> in the psychotherapeutic procedure which I employ in the solution and removal of neurotic symptoms, I am often confronted with the task of discovering from the accidental utterances and fancies of the patient the thought contents, which, though striving for concealment, nevertheless unintentionally betray themselves. (Freud 1938:64)

Thus proper names with unpleasant associations may be forgotten, or substitutions made (such as 'mother' for 'sister') which reveal unconscious, and therefore more 'truthful' attitudes or desires. Although this explanation of 'Freudian slips' has entered lay theories of accident causation, it seems doubtful whether it has changed the definitions that operate to include or exclude events from the category of accidents. It has merely excluded a certain group of happenings from the category; we may cease to see as accidents that for which there is now a rational causal explanation, even if that explanation relies on appeal to unconscious motivation. As the Freudian unconscious has become part of lay theories of

causation it has become possible to see motivation as being hidden from the actor. Denial of motivation is no longer enough to make a successful claim for a speech accident to have happened (indeed the very denial might furnish definitive proof of unconscious motivation). Denial merely places the speech accident on the negotiable boundary space of morally loaded and motivated actions.

Injuries as well as speech accidents are evidence of unconscious motivation. Freud is quite clear on the implications of his view for treatment of the sufferer:

> When a member of my family complains that he or she has bitten his tongue, bruised her finger, and so on, instead of the expected sympathy I put the question, 'why did you do that?'. (Freud 1938:131)

If the 'accident' is not really an 'accident', the victim cannot expect the sympathy normally due to someone who cannot be held responsible for their injury. The Freudian legacy has meant that accidental injuries could be seen not as the random outcomes of coincidence, but as demonstrations of underlying unconscious thought processes, either of the victim:

> The only way in which Allan could get relief from his guilt was by inviting punishments and hurts from outside...he became accident prone (Wolff 1969:88)

or another agent, as this psychoanalyst reports:

> A patient, while driving to work...suddenly struck an elderly man with his left, front fender and knocked him to the ground... On the basis of his associations to the various circumstances of what happened, it was possible to discover that the chief, unconscious, motive for the mishap was the patient's wish to destroy his father. (Brenner 1964:293)

Such analyses have had perhaps little effect on the field of accident research, even if they persist in the psychoanalytic literature. An editorial comment, preceding the paper from which the above quote was taken, suggested that such work may be difficult to integrate with the rising epidemiological approach in medicine, in that it was anecdotal, and not supported by 'rigorous and systematic research ... [and] controls are non-existent' (Haddon et al 1964). Freud's work may have shifted the boundaries of the accidental in everyday discourse (for instance, using the name of one's previous lover to the new one may no longer be forgivable as a purely accidental utterance) but it does not seem to have dispersed the category of events that are deemed to be accidental, as Brenner (1964) claimed it might. This approach could be seen as an attempt to make the unpredictable in some way predictable; providing rational meaning for the seemingly irrational. However, in everyday discourse there is still an heterogenous group of events that, with a workable consensus, we agree to categorise as 'real' accidents: events with no motivation and which can be understood only as random misfortunes.

THE ACCIDENT AS INJURY: SOCIOLOGICAL RESEARCH

Introduction

Sociological research on accidents has also focused largely on injuries, if it has been situated with medical sociology, or on large scale disasters, where accidents have been conceptualised as undesirable outcomes of organisational practices. One aspect of organisation that has received some attention in terms of accidents is that of knowledge and how it is distributed.

Within such an explanatory framework, an understanding of the social distribution of knowledge and ignorance is seen as the key to understanding causation. If accidents are seen as being caused by ignorance or error, it is not enough to

merely identify inadequate knowledge, or irrational behaviour in the face of adequate knowledge about safety. A rather more sophisticated model of ignorance is needed. Sociology has made some attempt to theorise the social relations of production of that ignorance. As Smithson (1985) has noted, ignorance is not simply the absence of knowledge, but is socially produced. Workers, for instance, are encouraged to concentrate on only 'relevant' information necessary for the performance of their occupational role and to avoid the distraction of 'irrelevant' inputs. Knowledge is not always socially desirable.

Turner (1978), in his study of disasters, established a base for a social theory of accidents in terms of how knowledge and ignorance were socially distributed. Although noting that there was no precise definition of a disaster, he suggested that they would include specific types of accident, such as:

> an unusually large-scale accident, an unusually costly accident, an unusually public accident, an unusually unexpected accident, or ... some combination of these properties (Turner 1978:26)

Other properties of a disaster were that it was an event:

> concentrated in time and space, which threatens society, or a relatively self-sufficient sub-division of a society, with major unwanted consequences as a result of the collapse of precautions which had hitherto been accepted as adequate (Turner 1978:62)

Traditionally, Turner claimed, social scientists had only been interested in such accidents as examples of social pathology: events which caused massive disruption to communities. The focus was on how communities coped with the aftermath, and the implication was that the factors contributing to the original accident were not a legitimate area for sociological study (Turner 1978:39). Turner argued that disasters are produced through an interaction of social, technical and organisational processes and arise from an absence of some kind of knowledge, or more

specifically from 'disjunct information'. Thus it was the social distribution of relevant knowledge that held the key to a social theory of disasters. He examined the preconditions of three disasters; the Aberfan tip collapse, the Mixon level crossing accident and the fire at the Summerland Leisure Centre. The knowledge needed to avoid all three disasters existed, claimed Turner, but was not distributed in a way which enabled it to be acted upon. Thus, the tribunal charged with inquiry into Aberfan noted that the knowledge about procedures necessary to stabilise tips had existed for years, but had been collectively neglected. In mining, attention was directed to the more clearly defined area of underground safety, distracting attention from above-ground hazards, such as unstable tips. The Mixon level crossing incident (in which a 150ft vehicle took longer to cross a level crossing than the 24 second warning given of an oncoming train) happened despite, again, the availability of the knowledge needed to foresee such an eventuality. Although the knowledge about the time a long vehicle would take to cross a level crossing was known, it was not known by the same agencies responsible for setting the timed warning. Adequate knowledge was not concentrated in any individual who had the insight to foresee its possible implications.

Perrow's (1984) argument went further, in his claim that accidents are not only analysable in hindsight, but that they were predictable, if the form they took was not. Indeed in some systems they were 'inevitable' or 'normal'. Systems, argued Perrow, can be modelled as consisting of six components known by the acronym DEPOSE; namely, Design, Equipment, Procedures, Operators, Supplies and Equipment and Environment. In some systems, these components display an 'interactive complexity', in that there are many complex relationships between them, and the system is 'tightly coupled', in that there is little slack to allow for shut-downs when one component fails. Accidents in such systems are not only possible, but inevitable. The relevant question then becomes not how they can be avoided, but whether the system in question (such as nuclear energy production) has benefits that are worth the risk. Post hoc construction of accident causation often identifies 'operator error' as the cause, yet the operator is often faced with

the inevitable but unexpected and mysterious interaction of parts of the system for which they are unprepared. Indeed, with some complex systems, with many technical and organisation components which could potentially interact, it would be impossible to prepare workers for all eventualities. It is only possible in retrospect to identify the preventative action which should have been taken. 'Accident reconstruction' claimed Perrow ' reveals the banality and triviality behind most catastrophes' (Perrow 1984:9).

Perrow, in claiming that some accidents are inevitable (in folk wisdom, that there are 'accidents waiting to happen'), is almost a lone voice. In general, the literature on accidents has concentrated on the questions of why and how some accidents happen, as if they could have been avoided. However, as a general class of events accidents are presented as a given; a natural category, the constitution of which is obvious. The question this study attempts to address, 'why do some misfortunes become labelled as accidents?' has received less attention.

One notable exception is Figlio (1985), who has attempted to account for the social category of accidents, rather than their causation. Figlio argued that the appearance of events which could be called accidents was intimately tied to the rise of capitalist relations of production. An accident, he claimed, could not have happened before contractual working relationships developed, for they are essentially acts of negligence. Intentional injuries, where compensation could be claimed if motivation could be proved have, Figlio claimed, a long history, but it was not until the Workmen's Compensation Act of 1897, which established routine procedures for claiming compensation for injuries caused during employment, that compensation could be claimed without proving malicious intent. A transitional stage was a fatality requiring a *deodand* payment, which Figlio defined as 'an ambiguous accident, unforseen and not malicious, yet somehow implying intent'. Before the rise of industrialism everything was seen to have a cause, so there could be no 'accidental' occurrences. Once the idea of negligence had entered master-servant law in the nineteenth century, replacing notions of complete responsibility, it became possible, Figlio argued, to conceive of the notion of an

accidental injury. The concept of 'negligence' enabled outcomes which were not directly and maliciously intended to still be held as someone's responsibility; in short, accountability became divorced from culpability. Within a 'contract' relationship, events such as injuries in the workplace could be seen as the result of negligence of contractual obligations as well as motivated action, and the notion of an 'accident', which was not intended to happen, but for which responsibility could be apportioned, became possible.

Others have also assumed this linkage between the notion of an accident and the history of economic relations. Blaxter (1976), for instance, claims 'there may be no practical difference in condition between a man ... whose chronic back pain is due to a lifetime's manual work and one whose back injury is caused by a single identifiable accident' but 'for reasons concerned with the economic value of the work ethic...most industrialised societies have chosen to treat the work injured rather differently from the rest' (Blaxter 1985:183). For the respondents in Blaxter's study of people with disabilities, such differences were a source of problems, as similar injuries were compensated by different benefits, depending on what the cause was found to be, and some of those who were disabled as a result of workplace 'accidents' were reluctant to accept the relevance of concepts such as negligence or fault (Blaxter 1985:186).

Turner (1989) also examined the relationship between relations of production and the notion of accidents, but turned Figlio's causal relation on its head. In charting the rise of the managerial class in Australian mines, she tied the emergence of this new class to a new discourse of safety that arose at the end of the last century. This new discourse centred on the visible bodies of miners, making it essential that they could be seen and their safety ensured at all times, necessitating a managerial function concerned with monitoring and coordinating this visibility. The discourse of safety, and an associated one of accidental injury, was not merely the result of new forms of managerial surveillance but one which altered the relations of production within mining, establishing a new alliance of managers with the capitalist class and differentiating them from the labourers.

Whether it is claimed that industrial relations of production enabled us to conceptualise accidents or that, conversely, a discourse of safety was a facet of emergent industrial relations, there is perhaps a problem in this terminological slippage from 'accident' to 'industrial injury'. It becomes tautological to argue that industrial injuries could only happen once industrial modes of production were established, even if the processes and ideologies surrounding those connections may be fertile ground for research. Focusing exclusively on one kind of accident risks begging the question: 'why were such injuries categorised as accidents specifically?'. Figlio's essay opened the field of enquiry into the social construction of accidents; charted the inclusion of industrial injuries into the larger group of misfortunes that we call accidents and analysed the shift in ideas of responsibility, with the inclusion of negligence as an act of responsibility. These new departures described by Figlio and Turner do not, though, account for the place accidents have had in our classificatory frameworks of misfortune. The comments of Blaxter's respondents suggest that we still distinguish acts for which no blame can reasonably be apportioned from others, even if the former category has been shrunk, at least in legal terms, by the removal of negligent acts. These are the events which are (at least provisionally) labelled as 'accidents', and they form a set which is larger than that of industrial injuries. Understanding how accidents are constructed as a category of misfortune may involve more than an account of how negligence is constructed in legal discourses.

Both the emergence of new forms of relations between labour and capital at the turn of the century and the Freudian prioritisation of the unconscious appear to have marked new boundaries to our common sense category of accidental events. If this boundary, as this suggests, is rather elusive, then it might be more productive to examine the rules by which it is maintained, rather than just to account for its contents. Understanding why some misfortunes are included or excluded as accidents necessitates some understanding of how the categorisation is made as well as what events are affected. To examine how the category is created it might be more useful to focus on the wider class of events of which accidents are a subset, namely misfortunes. Although there is little sociological literature on

misfortune as a general subject, there has been a considerable amount on another subset of possible misfortunes: those which are categorised as 'illnesses'.

The accident as a marginal category of disease

In terms of examining how illnesses are constructed in everyday life, a useful starting point might be the approach adopted by Cornwell (1984a, 1984b) in her study of 'public' and 'private' lay accounts of illness. Cornwell noted that ideas of fate, destiny and luck were as salient to her respondents as biomedical explanations in accounting for the experience of illness. Although, in general, good health was constructed as a morally worthy state and ill health as discreditable, the moral content of the illness depended on the circumstances: whether it was internally or externally caused; whether it was avoidable or unavoidable and whether blame could be attached. For those illnesses that were unavoidable and to which no blame attached, explanations centred on luck, fate and destiny: good health was a coincidence. In these accounts, accidents appear to have a rather ambivalent status. First, they are ambiguous categories of ill health, being not strictly 'illnesses', which meant that moral attribution was potentially problematic. However, as a category of health problem that were externally caused, Cornwell claims that:

> they were not problematic, in the sense that it was not difficult for people to admit to having had them ...[their] 'otherness' could be taken for granted' (Cornwell 1984a:189)

Although Cornwell is not concerned specifically with accidents (they are a marginal category of the misfortunes her respondents discuss), her approach is an important departure, as the features which characterise accidents are examined as ways of understanding the world, rather than as misconceptions. Despite Cornwell's assertion that accidents are 'not problematic' they emerge as rather

ambiguous: incurring perhaps a morally discredited state in 'public' accounts yet not in themselves blameworthy. In private accounts, Cornwell's respondents did not differentiate disabilities resulting from accidents, such as workplace injuries, from those resulting from other illnesses.

This raises the important issue of how moral meaning attaches to misfortune. Illness, as an arena of moral debate, has received considerable attention in research. Zola (1972), for instance, reported that students in his study described illness with terms loaded with ideas about moral responsibility: 'on nearly every level, from getting sick to recovery, a moral battle raged'. This construction of illness as moral battle has been reviewed as metaphor by Sontag in her work on the symbolic meanings of cancer and tuberculosis (1979). According to Sontag, the notion of cancer as a 'moral battle' derives from the metaphors which surround the illness. The word 'cancer' is a metaphor for insidious evil, which renders the disease as equated with the sufferer. Comparing the 'myths' which surrounded tuberculosis in the nineteenth century, which constructed the symptoms to be expressive of the sufferer's personality (sensitive, refined, interesting and therefore romantic), she argued that in the late twentieth century cancer is seen to be the outcome of certain personality traits, rather than expressive of them. Thus 'the cancer personality is regarded, more simply, and with more condescension, as one of life's losers' (Sontag 1979:49). These metaphors, she argued, are as punitive as ancient concepts of illness as punishment for wrongdoing, and they are essentially dysfunctional: 'the healthiest way of being ill is the one most purified of metaphorical thinking' (Sontag 1979:4).

It is difficult, perhaps, to envisage the domain of illness being stripped of its metaphoric meanings. However, in her attention to the specific meanings of certain illnesses, Sontag pointed to the potentially infinite range of moral meanings that could attach to illness. Zola's respondents talked largely about infectious disease, and here there is some evidence to suggest that illness is no longer constructed in moral terms, or at least not so starkly as Zola suggested. Pill and Stott (1982), for instance, contrasted the views of their working class respondents

with Zola's American students. They suggested that germ theory was now the dominant ideology of causation and responsibility for the lay public, despite efforts of health educators to persuade people to feel more responsible for their own illness and health. They attributed this contrast in part to the provision of free health care at the point of delivery in Britain, but more significantly as an inevitable result of a generation of propaganda around the dominance of antibiotics over the epidemic diseases that were prevalent before the Second World War. Germ theory is essentially an 'amoral' theory, in that germs are seen to be random, and no responsibility can be attributed to the ill. This is the classic Parsonian model of modern illness - a state which is undesirable, but which incurs no moral culpability and towards which the physician is ideally to be 'value neutral', his or her role being 'specifically limited to concern with matters of health' (Parsons 1951). The ideal physician relates to the patient in terms of their symptoms and prognosis, rather than any personal attributes (Gerhardt 1979). This Parsonian model of the physician's role has been criticised as limited (Szasz and Hollander 1956, Gallagher 1976), romantic (Frankenberg 1974) and as reflecting the physician's idealistic account (Bloor and Horobin 1975). Furthermore, empirical research in a number of settings suggests it has little validity as a depiction of the reality of medical encounters: Roth (1972) and Jeffrey (1979), for instance, describe the explicit moral evaluations made of accident and emergency department attenders, and Daniels (1987) describes how the bureaucratic environment in which military psychiatrists work constrains their exercise of morally neutral medicine. Despite the many and varied critiques, and more recent reformulations (Gerhardt 1979) it is, though, a model which still holds some force as a normative ideal, against which the physicians found in research and in practice are measured. The ideal doctor separates moral views from the provision of clinical care, and there is an enduring myth that matters such as medicine and hygiene in modern society are to do with the rational control of disease rather than the moral and social order (see for instance Douglas 1984:29). This very neutrality is seen as evidence of the progress of Western medicine and its maturity as a science, and individual physicians who express moral censure do so at risk of public and professional isolation. As an example,

the profession's response to HIV infection and AIDS in Britain, and to a lesser extent, the United States, is illustrative. Despite the view that there has been a 'moral panic' (see for instance Patton 1985:12) the public reaction of the medical profession has been cautious and characterised by an anxiety not to appear morally judgemental, under the rationalisation that such judgements may 'drive the disease underground' (Bayer et al 1986, Smith 1987). Research and debate centres on risk factors, epidemiology, prevention and cure and although the media coverage may engage in a moral debate in contrasting 'innocent victims' and 'blameworthy carriers', we would not expect the medical profession to endorse such views in public[1]. Our doctors may be our modern 'confessors', but only in areas we accept as medical. We expect their confidentiality, and also to be judged solely on medical, not moral, criteria in an ideal encounter.

This is not to suggest that medicine does not have a sophisticated role in constructing and reinforcing moral boundaries, and indeed there has been much debate about this aspect of the medical profession in terms of its social control function (see, for example, Szasz 1961; Zola 1972, 1975; Illich 1975). Rather, it is merely to suggest that there is an enduring normative construction of medicine as morally neutral and illness, at least in 'public' accounts, as being the result of chance factors ('germs') as well as heredity, environment and behaviour (or 'lifestyle'). Despite the rise in what Crawford has called 'victim blaming ideologies' which hold the sufferer, rather than external social factors to be responsible for illness (Crawford 1986), we are not often held accountable for our illnesses, even if we may be seen as sometimes culpable of contributory negligence.

Within such a normative account of medicine as rational and value neutral, the accident may appear initially to be the ideal medical misfortune. In terms of the way in which accidents are apparently defined (as unmotivated and unpredictable), impaired health arising from accidental injury ought to be an 'ideal' illness.

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[1] This is illustrated by media censure of clinicians who refuse to treat patients who persist in 'unhealthy' behaviour, such as eating sweets or smoking (see, for example, Bunting 1994).

Indeed, Figlio (1985) has suggested that the accident forms an archetypal model for modern understandings of illnesses. Within Cornwell's, and other's, accounts of lay beliefs though, accidents are suggested as being morally rather more ambiguous. In general they have been constructed as marginal to ideas about health and illness, which are the central concerns of medical sociology. The reasons for this focus may lie partly in the dependence of medical sociology on the structures of Western medicine: we have no 'sociology of misfortune' which might include an examination of the accidental, but a 'sociology of health and illness' within which the accident occupies a similar place as it does in nosology. In these terms accidents are reduced to injuries, with research concerned with how medical and psychological causes and sequelae are managed and conceptualised.

THE PLACE OF THE ACCIDENTAL IN SOCIAL THEORY

The dominance of medicine over the substantive concerns of medical sociology cannot, though, be held solely to blame for the neglect of the accident in social theory, and it is worth reviewing the origins of some of sociology's 'core theory' in order to examine some of the theoretical disincentives to the development of such a study. The roots of sociology lie in the same ground as those of science and medicine. Many of the founders of modern sociology were, claims Wilson 'self-consciously rational' (Wilson 1970:1). Sociology has been overtly, and perhaps inevitably, concerned with providing rational explanations for the behaviour of people and the structure of societies. Popper (1960) is perhaps a notable exception, in his argument against 'historicism' in the social sciences. He advocated a less ambitious role for sociology, with a focus on 'a more detailed analysis of the logic of situations' (Popper 1960:149), given his belief that the 'human or personal factor will remain the irrational element in most, or all, social institutions' (ibid:157). However, Popper's advocacy of a 'piecemeal social engineering' (ibid:67) role for sociology (in contrast to that of elucidating laws of

social development) came from outside the discipline and perhaps has had little intrinsic appeal for social theorists. Until recently, the concerns of grand theory have been of structures and patterns. The 'accidental', almost by definition, has been largely perceived as meaningless as a type of social action as it is unmotivated, and as irrelevant as explanation of events. Medical sociology may have developed no adequate theory of misfortune for our purposes, but the main traditions of social theory have provided little incentive.

Durkheim: positivism and structuralist analysis

To begin with the classic example of Durkheim's more positivist writings, it is difficult to see what part the accidental could play. Part of the Durkeimian project, for instance, was explicitly concerned with uncovering social laws to make sense of social behaviour. Although Durkheim was concerned with supposedly 'irrational' facets of social behaviour such as religion and suicide, his concern was to demonstrate regularities at the social level which rendered individual irrationality comprehensible and his methodological premises have no room for the accidental. Durkheim claimed that:

> our principle objective is to extend scientific rationalism to human behaviour. It can be shown that the behaviour of the past, when analysed, can be reduced to relationships of cause and effect (Durkheim 1950:xxxix)

The capricious accident can furnish no useful data for such a project. Although The Rules of Sociological Method represent only a small, and perhaps atypical, part of Durkheim's work, the sentiments expressed here have had an enduring impact on the positivist tradition. Durkheim's sociology here and in Suicide relied on the kind of vital statistics that were well established by the end of the nineteenth century. Social facts, he claimed, are:

> represented with considerable exactness by the rates of births, marriages and suicides, that is by the number obtained by dividing the average annual total of marriages, births and suicides by the number of persons whose ages lie in the range in which births, marriages and suicides occur. Since each of these figures contains all the individual cases indiscriminately, the individual circumstances which might have had a share in the production of the phenomena are neutralised and, consequently, do not contribute to its determination. The average, then, expresses a certain state of the group mind (Durkheim 1950:8)

The accidental is to be 'neutralised'. Some apparently accidental events will only reveal their structured causes after appropriate investigation:

> facts most arbitrary in appearances will come to present, after more attentive observation, qualities of consistency and regularity that are symptomatic of their objectivity (Durkheim ibid:28)

Those that do not reveal such objectivity of observation are presumably not worthy of further investigation. The vital statistics available to Durkheim did not include the sophisticated analyses of accident rates that were produced from the middle of the twentieth century, but since then there has of course been considerable scope for a positivist sociological analysis of accidental injuries in terms of such social division as class, gender and ethnicity. These studies have been, though, largely the domain of epidemiologists, rather than sociologists, and the few exceptions have explicitly challenged the concept of accidents as random, morally neutral misfortunes. In the debate about how far workplace accident rates can be seen as indicators of economic recession, for instance, such events have been referred to as 'industrial injuries', to indicate that there is nothing 'accidental' about their causation (see Nichols 1989, 1991; Tombs 1990, 1992). The accident has to be reconceptualised as something other before it can be used in any positivist sociological enquiry.

Moving on from Durkheim's positivist legacy, it could be argued that this brief comment on Durkheim's attempt to situate sociology as a fledgling science is merely caricature, and ignores his contribution to the structural tradition in social thought. Durkheim's structural sociology was more concerned with the *nature* of relationships between social categories, rather than with the relationships between such categories as 'objective facts'. In Primitive Classification (Durkheim and Mauss 1963), for instance, the tone is less empiricist than in Suicide or The Rules of Sociological Method, and the argument perhaps more uniquely 'social'. Durkheim and Mauss are here concerned with the human ability to classify. Neither nature nor innate ability provide a model for hierarchical classifications: they emerge from social categories. The most primitive classification systems are the class and the moiety, to which all things belong: *'the classification of things reproduces this classification of men'* (Durkheim and Mauss 1963:11, emphasis in original). Objects and spaces in the natural world are thus arranged to correspond with the primary logical categories, which are social in origin. This insight laid one of the foundations for the structuralist tradition in social thought: the attempt to account for cultural phenomena through analysis of 'deep structures' which pattern the surface. Thus relations between cultural artifacts (raw and cooked food; totemic symbols; items of clothing) are not random, but are systematically ordered by their correspondence with underlying social relations between classes of people. Again, though, accidents as they are constructed in everyday usage have no place: a structural theory explicitly seeks to pattern the apparently random and meaningless. Such an approach (if it were possible) could only neutralise the accidental as comprehensively as does positivist aggregation. The accident, as a unique event, unpredicted and unmotivated, has no place as sociologically significant event or as socially meaningful explanation. Both positivism and structuralism render the accident as marginal to theoretical concerns.

Weber and Pareto

If our concern is with an exploration of the meaning of accidents and with how they are constructed as a category of misfortune, then the Weberian tradition in sociology could perhaps more reasonably be expected to provide a theoretical starting point, as Weber is the theorist associated with an approach which centred on understanding meaning as it is constructed by social actors. Given the suggestion that accidents are somehow defined outside the bounds of rational behaviour and understanding, Weber's problematisation of rationality may perhaps be helpful. Wilson notes that Weber was less optimistic than other 'founding fathers' about the utility of a universal application of 'scientific' laws in his attempt to 'make explicit the point at which the value freedom demanded by scientific rationality could be fully operative in social enquiry' (Wilson 1970:1), and others have noted that he was less than wholehearted about the positive aspects of modern rationality (Schroeder 1987). However, a major legacy of Weber's work has been a prioritisation of the rational as an essential feature of the modern world and a conceptualisation of non-rational behaviour or belief as characteristic of pre-modern society or as simply uninteresting as a subject of social enquiry. Giddens, for instance, quotes Weber on the comparison of modern capitalist society which is 'rationalised on the basis of rigorous calculation, directed with foresight and caution' to traditional peasant economy which is 'orientated to the exploitation of political opportunities and irrational speculation' (Giddens 1971:127). Belief in accidental cause appears as anachronistic within a modern rational cosmology, an example of ritual action that does not constitute proper social action. Action is only properly social, Weber claimed, 'in so far as, by virtue of the subjective meaning attached to it by the acting individual (or individuals), it takes account of the behaviour of others, and is thereby orientated in its course' (Weber 1947,* cited by Keat and Urry 1975:145). Only action so orientated is seen as a fruitful object of sociological inquiry. Accidents, by definition, do not result from this kind of motivated behaviour and describing a misfortune as an 'accident' rules it outside the bounds of an outcome of rational

*Weber, M. (1978) *Economy and Society: an outline of interpretive sociology* (ed Roth, G and Wittich, C.) University of California Press (p 4)

calculations. Characterising modernity as rational, and characterising rationality as an economic cost-benefit calculus, renders the accident a left-over; an event of little interest.

It is, however, not enough to associate Weberian sociology merely with an interest in understanding social action and with modern rationality. Sica (1988) has claimed that Weber was much interested in the place of irrationality in social life, at times giving primacy to notions such as personality and erotic love which exist in tension with rational incentives, but that later theorists such as Parsons have neglected this area of his work. Sica argues that this neglect, together with the relative neglect of Pareto's writings on the irrational, have impoverished social theory. 'With Vilfredo Pareto's death in 1923', he claims, 'the century's last major social theorist to set irrational factors as central to communal life was silenced' (Sica 1988:1). Pareto was concerned to rehabilitate the 'accidental' in social life, as a reaction to macro theory (specifically Marxism) which aimed to explain short term change and behaviour as well as broader social change:

> The notion that great historical occurrences are attributable to small personal causes is now almost wholly discarded, but it is frequently replaced by another error, that of denying the individual any influence at all on circumstances (Pareto 1976:123)

Our concern to attribute rationality to all human decision making results, argued Pareto, in post hoc rationalisations of what are essentially sentiment: 'a large number of human actions are not the outcome of reasoning. They are purely instinctive actions...' (Pareto 1976:124). Like instinctive actions, accidents apparently 'just happen', but possibly with far-reaching social consequences. Theoretically, though, events which 'just happen' are not amenable to analysis. At the moment they are analysed and mapped onto a pattern, they cease to be accidents.

There are, though, points at which Weber also made explicit his prioritisation of the 'irrational' as a driving force in social life. The concept of 'charisma', for instance, is essentially one which lies outside the rational workings of society:

> a certain quality of an individual personality by virtue of which he is set apart from ordinary men and treated as endowed with supernatural, superhuman, or at least specifically exceptional powers or qualities (Weber 1968:48)

Despite being inherently unstable and liable to be 'rationalised' through bureaucratization or some other formalisation of leadership candidacy, charisma is cited as 'a highly important element of the social structure' (Weber 1968:39) yet it is 'foreign to all rules' (ibid:52) and is 'sharply opposed to rational, and particularly bureaucratic, authority' (ibid:51). Here an almost paradigmatic example of 'irrational' behaviour; leadership based on purely personal qualities, legitimated by force of personality and spiritual inspiration, is held to be a central feature of social life, potentially the 'greatest revolutionary force' (ibid:53), capable of changing a whole society's attitudes and understanding of the world. Weber's 'charismatic leader' has been compared with Nietzsche's *Übermensch*, the heroic enemy of all routine and rational thought (Schroeder 1987). An 'accident' of history; the coincidence of personality and the spirit of the age, can have more impact on the course of society than the developments from rational decisions.

Certainly, Weber was less than wholehearted in his admiration of the modern Western project of rationalisation. Despite an introduction to The Protestant Ethic and the Spirit of Capitalism (Weber 1930) which eulogized the achievements of science, arts and culture in the West under the support of a rational philosophy, he noted that rationalism is itself a historical concept, appearing in different forms in different places. His description of the beginnings of a protestant ethic, a precondition for the development of regulated modern capitalism, is particularly chilling, and cannot be read as sympathetic. The development of organised capitalism, claimed Weber, required not only the separation of work from the

household and the development of rational bookkeeping, but also some concept of a 'calling to labour' which facilitated the capitalist organisation of labour. Although the impulse to acquisition is probably as old as human nature, the organised production of profit (and renewed profit) on a large scale is only characteristic of modern Western society. Such forms of production would be inhibited by a 'traditional' approach to labour which would treat higher wages as an incentive to work less rather than more, since satisfaction of need is traditionally a better motivation than wealth accumulation.[2] High productivity can only be achieved if labour is seen as an end in itself, and if the acquisition of wealth is not a morally ambiguous pursuit. Weber again, then, located an 'irrational' force at the heart of the problem: that of the 'calling to labour', and asks how it became possible. The first precondition was the emergence of the Calvinist idea of predestination during the sixteenth and seventeenth century in the Protestant European countries of France, Britain and the Netherlands. The notion of predestination held that Man cannot save himself and that God has predestined some for salvation, and the rest to eternal damnation. Although an individual could not know whether they were 'saved' or not, it would be ungodly not to behave as if 'saved'. It was a divine duty to believe in one's state of grace. Thus a belief in predestination made possible the idea of worldly activity as useful in itself as a sign of belief in one's own salvation, rather than as a (now useless) route to salvation. The Catholic could accumulate a stock of 'good deeds' as credit against times of weakness and, through a cycle of sin, repentance and redemption could work on Earth towards salvation. Calvin's God was less amenable to human appeal: Weber describes the logical outcome of the idea of predestination as 'an elimination of magic from the World' (ibid:105). Not only

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[2] The extent to which Weber's characterisation of the peasantry as 'irrational' is a valid one is debateable. Following Chayanov (1966), Scott has argued that peasant behaviour is only irrational if seen from the point of view of capitalist agricultural enterprise, and if the marginal subsistence status of most peasant economies are taken into account, then it can be seen that there is a very rational 'moral economy' which operates on a safety - first principle of risk avoidance rather than profit maximisation (Scott 1976). Popkin, in his critique of Scott, argued that even in marginal economies peasants are likely to behave with a similar rational calculus as capitalist producers, maximising profits where possible and taking individual and communal risks to do so. Their behaviour, argued Popkin, is economically rational in the modern sense in that 'individuals evaluate possible outcomes associated with their choices in accordance with their preferences and values' (Popkin 1979:31.)

had the supernatural disappeared as a way of influencing the afterlife, but religion had too. The world was also a lonely place: if there was no way of influencing the salvation of others, there was little incentive to be concerned for their welfare, and excessive trust between people was discouraged. Weber pictured the Calvinists as not only isolated from their God, but also from the fellowship of human society. Work became a 'calling'; a methodical application of skilled work as for the glory of God, not in an attempt at influence, but purely as an end in itself. Wealth was no longer morally ambiguous, except as a temptation to idleness, which was a deadly sin. Weber's account of the origins of capitalism belies any assumption of his belief in the inherent superiority of rationality.

Sica argues that the neglect of Pareto's work on the place of the irrational in social life, at least in North American sociology, has as much to do with extra-intellectual causes as with quality of scholarship. Whereas Weber was concerned to make his ideas accessible through seminars and popular lectures, Pareto was more introverted, and suffered from purported associations with Fascism in Italy. The neglect of Weber's more sophisticated work on irrational influences is attributed to the difficulty in reading many of his works and the fact that the interest was never made explicit, but can only be inferred from the tension in the writing and biographical knowledge. Although, as the examples above indicate, Weber did prioritise the 'irrational' as a force for change, his legacy has been the study of social behaviour as rational behaviour, and a placing of rationality at the heart of the modern. The result of this somewhat biased legacy, claims Sica, is that sociology and non-experimental psychology have not 'assumed their rightful place as interpreters of all social behaviour that surfaces within modern societies. They remain fixed too securely to a scholastic vision, leaving interpretation of the most interesting (which often means non-rationalised) behaviour to theologians, psychiatrists and journalists...' (Sica 1988:30). Thus, he argues, such questions as why people might behave in apparently irrational ways, or what factors contribute to making life meaningful are thus neglected, although they are potentially legitimate areas of sociological interest.

One such area is the accident. As a specific category of misfortune, the accident has been neglected: considered by definition not worthy of properly sociological enquiry. Lay views on accidents have been presented as essentially anachronistic, as leftovers from earlier beliefs in fate, luck and chance. Epidemiology and Freudian psychology have waged a seemingly unsuccessful battle against these views, and sociology has on the whole ignored them.

Recent approaches

More recently, there have been attempts to accommodate chance, and by implication accidents, as a legitimate area for enquiry in sociological theory. Smith (1993) reviews the major traditions in social theory, particularly Weberian ones, and concludes that chance has been treated as a residual category. From the 1980s onwards, though, he claims, the work of writers such as Foucault and Giddens have recognised the potential importance of chance as an explanatory concept. He attributes the shift in focus to the undermining of the structural functionalist consensus in sociology in the 1960s and to a renewed interest in the mechanisms of change rather than stability. From the middle of the 1970s 'late modernity' provided an added incentive, in terms of both the cultural environment and methodologies developed to understand that environment. The cultural factors are those of fragmentation, with an attendant focus on difference and ambiguity. Smith argues that chance itself becomes a more significant feature when there are fewer certainties to describe social life. Furthermore, sociologists, in reacting to these new 'conditions for chance' have developed more flexible approaches which must encompass the fragmentary and arbitrary in social life, as well as the patterned and structured elements that were reviewed above. Foucault (1984), for instance, is cited as elaborating a conceptual framework within which chance holds a dominant place. Smith quotes examples of recent work that has involved chance as an explanatory variable including Abrams' (1982) work on careers, which

recognised the import of the fortuitous, and Boudon's (1986) study of the importance of fortuitous contingencies in social change.

So if chance is no longer a residual category, how has it been conceptualised? Social chance, argues Smith, refers not to the merely random or coincidental nature of much social life as it is actually experienced, but to what he refers to as 'unforseen chance'. This combines the unforseen impacts of causal sequences and the unforseen consequences of interactions. A sociology of chance, he implies, is properly concerned with the social distribution of such events: in what circumstances are unforseen consequences likely to arise, and which developmental processes are they likely to generate? Accepting chance as a legitimate explanatory concept does not, he argues, deny the significance of structure or agency, but rather adds to them, to produce a more adequate model of social development.

Smith's outline of what could be called the rehabilitation of chance in sociology is an interesting one, which suggests accidents as a significant set of what we choose to define as 'chance' events. In some ways it serves perhaps as a belated answer to Popper's call for a less ambitious project for sociology which accounts for the specifics of social situations, including the personal element. However, it does raise the question of how certain events or outcomes come to be defined as 'chance'. To argue that chance events are somehow a more central feature of our cultural life in late modernity and that therefore sociological theory must, if it is to be useful and relevant, encompass it, risks a rather circular argument, for it is impossible to test empirically whether chance has become more significant or whether by theorising it, we make it so. Sociology is one discourse that helps produce 'late modernity', with its fragmentation and ambiguity, and can logically have no privileged position in accounting for how it is constituted. It thus becomes rather difficult to argue, as above, that the accident has been 'neglected' in traditional social theory, as this supposes there was a pre-existing category of 'chance' events, produced by some other discourse.

What may be possible, however, is a less ambitious project that explores how modern discourses create the accident as a particular 'chance' category. Some of the insights of the theorists reviewed by Smith will be used to examine notions of risk in accounts of the accident in late modernity, and how accidents are constituted as a particular category of misfortune. First, though, it may be useful to account in more detail for the 'rationality' attributed to the traditional social theorists to identify how accidents could have emerged as a residual category.

CHAPTER THREE

SITUATING THE ACCIDENT: RATIONALITY

INTRODUCTION

The review, in the previous chapter, of some of the literatures which address accidents implies, at one level, a neglect of the accidental as a lay category of misfortune. The two features which apparently describe accidents in lay discourse (their unpredictability and their moral neutrality) have been explicitly challenged in the professional accounts of psychology and medical nosology, and marginalised in classical sociological theory. Only it more recent sociological writings has there been a legitimate space to analyse events constructed as 'chance' happenings. However, there is a logical problem with merely characterising the silence of earlier literatures as 'neglect', as this implies that accidents somehow exist outside discourse, as a 'natural' category, regardless of how social actors choose to classify or analyse them. An examination of attempts to construct a 'history' of accidents indicates how problematic such a notion of remedying the neglect might be.

MEDIEVAL MISFORTUNES: THE CORONERS' ROLLS

A 'history' of accidents might start with an attempt to trace the events we would label as accidents today in terms of how they were classified and conceptualised in earlier periods. Sharpe's transcriptions (Guildhall MS 126) and translations

(Guildhall MS 126, Sharpe 1913) of the calender of fourteenth century coroners' rolls from the City of London are one example of such a project, in that they provide some information on one particular group of misfortunes, those of people found *ex alia morte quam recta morte sua*[1], for whom a coroner and jury had to be called. In early English law, it has been argued, the overriding principle was of compensation, rather than punishment or reform: a wrong was not a wrong because it was inherently immoral, but because it caused a loss to someone else, and must be compensated. The reform of the subject was not at issue, only the peace of a community potentially disrupted by an act such as theft or injury. Holdsworth (1936:51) has claimed that it was not until the thirteenth century that morality became a significant issue. Until then, intent was not relevant, but rather the consequences (intended or other) of one's actions. The law, as Holdsworth put it, was 'regarding not the culpability of the actor, but the feelings of the injured person whose sufferings may be traced ultimately to the act' (ibid:52). There was, therefore, no logical need for the law to differentiate accidental injuries from 'purposeful' ones. If an act led (however indirectly) to an injury, the actor was responsible for recompensing the injured or their kin and their motivation was not at issue. Culpability extended also to material possessions and animals, and these could be held 'responsible' for a death, in that a particular object or animal constituted the immediate cause. In such cases, their value could be deemed *deodand*[2], or payable to the crown as 'compensation' to God. Anything moving could be held deodand, including weapons used to murder, or objects that caused fatal injuries.

Elements of this earlier compensation principle are in evidence in Sharpe's translation of the fourteenth century coroner's rolls, although Hunnisett (1961: 21) claims that by then the coroner had a duty to distinguish felonious and other

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[1] 'lying dead of a death other than their rightful death'

[2] Literally, 'a gift to God'. A deodand was a forfeit payable to the crown, to the value of the material object found to be responsible for a fatality. They were finally abolished in English law in 1846, reputedly because of the large payments potentially arising from railway accidents (Jervis 1986:3). See Figlio (1985) for a discussion of the role of the deodand in the history of injury compensation.

fatalities, and that those caused by misadventure would 'invariably' result in a pardon for the person found responsible, although this would require a further enquiry (ibid:77). Although this suggests a legal discourse of morality and intent, within which the accidental would have a place as explanation of events which were not intended, it is perhaps unhelpful to fall into the trap of seeing here echoes of our modern obsession with a specifically moral enquiry. As Foucault has warned, in another context (that of uncovering knowledge about wealth), it is misleading to extrapolate backwards towards supposed origins on the basis of superficial similarities:

> ...there does exist in the seventeenth and eighteenth centuries a notion that is still familiar to us today, though it has lost its essential precision for us. But 'notion' is not really the word we should apply to it ... it is more a matter of a general domain...this domain is that of *wealth.* It is useless to apply to it questions deriving from a different type of economics...useless also to analyse its various concepts ... without taking into account the system from which they draw their positivity... We must therefore avoid a retrospective reading... (Foucault 1989:168)

To avoid a 'retrospective reading' of these misfortunes it might, then, be more productive to avoid a chronological exercise in identifying early examples of accidents and attempt instead to account for the essential dimensions of this medieval classification of misfortunes.

The case of Elyas Ide illustrates the problems of a retrospective reading. This seaman, having drunk considerable amounts of beer, suffers a fatal fall whilst attempting to climb the mast of a ship. At his inquest:

> They [the jury] attribute his death solely to his drunkenness, the rope and, further, find that neither the ship nor anything belonging

> to it was moving or being moved, except the rope (Sharpe 1913:177)

Two central issues exercise the jury here: to which objects can the death can be directly attributed, and were they moving at the time? As the ship is not moving, it cannot be held to be the cause. The rope the seaman is attempting to climb is moving, so that can legitimately be held deodand and is found to be the only cause of Elyas Ide's death. The rope is therefore appraised at 10s, which must be paid as deodand. Sharpe makes an editorial note that this is 'another instance of objects, animate and inanimate, being made to bear the guilt of homicide, which would more justly have been ascribed to beer' (Sharpe 1913:12ff). In similar vein is the case of William Borefaunt, a skinner, who:

> stood drunk, naked and alone, on top of the stair in the aforesaid rent for the purpose of relieving nature when by accident he fell foremost to the ground and forthwith died. The stair appraised at 6d for which William de Brykelworth, one of the Sheriffs will answer (Sharpe 1913: 276)

The important distinction made by these medieval juries is not, though, between fatalities for which the victim could be held as negligent and thus, to our modern morality, somewhat responsible as this man may have been, and those which are blameless, but is rather that made between fatalities which have some discrete object that can be held to be the cause (such as a rope or stairs) and those with no such object. Sharpe's comment implies that this reflects a kind of irrational animism, a shifting of 'rightful' blame from victim to object. To see the deodand as animism is, though, to read these accounts with a modern (or at least post seventeenth century) gaze. The juries of these medieval cases found 'infortunia' the cause of most of these misfortunes. Sharpe translates 'infortunia' variously as 'mischance' (MS 126:5) and more specifically as 'accident': as in 'Robert Page shot the aforesaid Robert Palfreyman with a certain arrow by accident in the left hand side' (MS 126: 269). The cautious Robert Page is then reported to have

'fled forthwith', presumably knowing that the jury would have been interested not in his motivation (whether he meant to kill or not), but in whether his arrow caused the death, in which case the responsibility would be his. The 'infortunia' here is not the misfortune of the modern accident, which derives its character from opposition to other, more culpable acts. It is rather 'misadventure': a concept that seems to encompass a lack of object, rather than a lack of motivation. Felonies may have been differentiated from these 'misadventures' at some later date, after the inquest was over, but motivation was not a central issue for the jury. Sharpe translated 'infortunia' as 'accident' in those cases which looked (in 1913) like 'accidents'. Today, it is no more possible to translate the Latin transcripts in a way which reflects how the actors at the time conceptualised misfortune. We have only the implication, from what it was considered important to record, that motivation (which is so central to both our ideas about accidents and about justice) was less important than identifying the immediate cause of fatalities.

If it is not possible to reconstruct an earlier classification of misfortune through an examination of how medieval juries dealt with deaths which we would see as 'accidental', it may be more profitable to look for the conditions which made our classification possible. The question then becomes not 'How have accidents been seen through history?', with a consequent focus on why they may have been neglected in sociology, but rather 'When did it become possible to have an accident?'. The answer to such a question may lie in an examination of the history of a discourse of accidents, rather than in a history of the events which we would today label as 'accidental'.

At what point, then, did it become possible to speak of accidents? In some respects the silence of the social theorists of the late nineteenth and early twentieth centuries was broken by the 1930s, when accidents appear in the accounts of social anthropologists. Here, accidents (or a belief that they happen) serve as an indicator of a specifically 'modern' way of thinking about the world. In an attempt to understand the essential difference between 'moderns' (the

anthropologists) and 'primitives' (the objects of their study), a belief in accidents - events which are unpredictable and have no moral culpability - is central.

ANTHROPOLOGICAL ACCOUNTS - THE ACCIDENT AS DEFINITIVE OF MODERNITY

In 1923, Levy-Bruhl presented 'primitive mentality' as essentially irrational, in that it was governed by ideas (such as belief in supernatural forces) which would be held as illogical and contradictory by Western standards. It was the primitive's attitude to the events which we might label accidents which Levy-Bruhl saw as definitive of this irrationality. The primitive had no conception of chance, or coincidence, because all events were invested with meaning.

> From disease and death to mere accident is an almost imperceptible transition...primitives as a rule do not perceive any difference between a death which is the result of old age or disease and a violent death...Therefore every death is an accidental one, even death from illness. Or to put it more precisely, no death is, since to the primitive mind nothing ever happens by accident, properly speaking (Levy-Bruhl 1923:43)

Levy-Bruhl collected accounts from missionaries in Africa and North America to demonstrate the primitive's different perceptions of chance events. All misfortunes, whether illness, accidents or bad weather happened for a reason and had a decipherable cause, be it the breaking of a taboo or the action of witches or of angry ancestors. The victim of an 'accident' in such systems had none of the status Levy-Bruhl sees as belonging to a modern victim, such as the right to sympathy or at least not to be held culpable. Indeed, in primitive society, the

victim was likely to be secluded, outcast or persecuted as the bearer of mystic infection. The logic of supernatural causation is self-sustaining: the continued appearance of misfortune demonstrates the continued action of witches or necessity to respect taboo. One of Levy-Bruhl's examples is of three women on a river bank, one of whom is pulled into the water by a alligator and eaten. Here, argued Levy-Bruhl, two beliefs that the 'modern' mind would hold to be contradictory were held simultaneously by primitives. One is that alligators do not attack, and that it is therefore quite safe to draw water where they swim. The second is that sometimes people do get eaten by alligators.

> ...to the native mind what has occurred cannot be accidental. First of all, alligators would not have attacked the women of their own accord. Therefore someone must have incited this one to do it. Then, too, it knew exactly which woman to drag under the water...The only thing to find out was *who* had done it...(Levy-Bruhl 1923:50)

To hold two apparently contradictory beliefs is, for Levy-Bruhl, evidence of the 'irrationality' of primitive mentality.

Evans-Pritchard's description of Azande cosmology has acquired the status of a 'classic' case study of these irrational beliefs described by Levy-Bruhl. It might be useful to examine how Evans-Pritchard described Azande explanations of misfortune and the accidental, given that their cosmology has been seen as not 'rational', or at least not rational in the same way that modern scientific discourse is held to be, and to examine the place of accidents within that cosmology. Evans-Pritchard concurred with Levy-Bruhl's theory that there is something quite different about 'primitive mentality', and he described the Azande's views on witches to be irrational, despite their seductiveness. He noted how powerful this dominant discourse could be:

> I, too used to react to misfortunes in the idiom of witchcraft and it was often an effort to check this lapse into unreason (Evans-Pritchard 1937:99)

According to Evans-Pritchard, all misfortune, for the Azande, was the result of witchcraft. Witchcraft was an invisible substance which witches could send flying through the night to attack others. Witchcraft could be inherited, and one didn't necessarily know that one was a witch. Only by consulting an oracle could the identity of a witch be discovered. Thus a belief in witches was a ubiquitous and comprehensive explanatory system which functioned to explain misfortunes which arose 'not only from miscalculation, incompetence and laziness, but also from causes from which the African, with his meagre scientific knowledge, has no control' (ibid: 64). Only misfortunes which clearly resulted from the breaking of a taboo (such as not observing appropriate restrictions on when sexual intercourse could occur) were exempt from these explanations.

While concurring with the theories of natural causation that we might describe as 'rational' (that for instance a leg is broken because a tree branch fell on it), an Azande would also have expected an explanation of 'why me, and why now?', a question not perhaps amenable to rational explanation. The Azande would not only have asked the question, but would also have expected to find the answer. Accidents, like other kinds of misfortune (such as illness or lack of success in hunting) were seen to be explicable in personal and moral terms as well as those of natural cause and effect. The Azande recognized a plurality of causes, relating to different levels of explanation, and witchcraft operated at the social level of explanation. In a hunting metaphor witchcraft was 'umbaga', or 'the second spear' which had as great a part to play in the death of a hunted elephant as the first spear. Thus the 'natural' causes of a misfortune such as the immediate cause of injury or lack of foresight were accepted, but not as a complete explanation:

> It is the particular and variable conditions of an event and not the general and universal conditions that witchcraft explains (Evans-Pritchard 1937:69)

As an example, Evans-Pritchard described one potential misfortune which we might classify as an accident; that of a granary collapsing while someone was sitting underneath, sheltering from the sun. The legs of the granaries were often weakened by termites, and a collapse could perhaps kill those sitting beneath. The immediate cause of the collapse (and so the death) may be clear, but there would still be a need to understand why the granary had to collapse at the very moment when someone was underneath:

> To our minds the only relationship between these two independently caused facts is their coincidence in time and space. We have no explanation of why the two chains of causation intersected at a certain time and in a certain place, for there is no interdependence between them.
>
> Zande philosophy can supply the missing link...Witchcraft explains the coincidence of these two happenings (Evans-Pritchard 1937:70)

The Azande would have fully expected to discover why such a misfortune befell them and who they could rightly have blamed - and indeed exacted vengeance from. For Evans-Pritchard, this lack of belief in the coincidences that cause accidents as normal misfortunes marked the Azande as irrational: primitive in comparison to modern societies.

It was not only the social anthropologists of the 1920s and 30s who used a belief in accidents as an indicator of superior mental abilities. Piaget, writing in 1930 on the development of children's causal logic, describes children's views of physical causality in terms rather similar to those of Levy-Bruhl:

> The child fills the world with spontaneous movements and living 'forces'; the heavenly bodies may rest and move as they please...trees swing their branches spontaneously to make a breeze, water flows by virtue of a force residing in it (Piaget 1930: 114)

The young child attributed animistic motives to physical objects and, even in later stages of development when mechanical cause and effect was understood, Piaget argued that 'the child feels a very definite repugnance for the ideas of physical necessity and chance' (Piaget 1930:117). Until 7 or 8 years old, he or she feels that there are no chance events in the world. Everything has a reason, has been willed and is entirely moral. Only after this stage do they admit that 'there are things which serve no useful purpose and events due solely to chance encounters' (ibid:277). As an example, he cited children's responses to a 'fixed' guessing game. In this game, a set of counters all marked with an 'X' are placed in a bag. The children are asked to draw a counter after guessing if it will be marked 'X' or 'O'. Although the instruction might lead them to believe the set was mixed, the children, reported Piaget, are not surprised by the result: that all the counters they draw are the same. They would have expected such a result from a normal, mixed, set of counters (Piaget and Inholden 1975:95-115). Children's inability to conceptualise the rules of random chance also, argued Piaget, indicates an immature moral viewpoint. Until the age of 10, he argued, the child is as likely to evaluate moral culpability through the effects of an action (for instance the extent of damage it caused) as whether the action was intended or not (Piaget 1932:118). The child is thus perceived as essentially a primitive, still to learn modern modes of explanation and moral accountability.

Although Piaget was writing in the 1930s, and many of his findings about children's conceptual development have been contested (see, for example, Donaldson 1978), the idea that development can be measured in terms of ability to accept the accident has, to some extent, persisted in research. One study (Kister and Patterson 1980) looked at whether there were developmental trends in the understanding of the causes of misfortune, and whether children used notions of

'imminent justice' to explain misfortunes such as accidents, illness and loss. This is the idea that misfortune strikes as a direct result of wrongdoing. The authors hypothesised that 'as the rational causes for an event become more salient, the child should be less inclined to explain that event in terms of imminent justice'. They asked the children in the study about contagious ailments (a cold), a non-contagious ailment (toothache), an accident (a scraped knee) and a non-health misfortune taken from one of Piaget's studies. This was the story of a boy who, after disobeying his mother, walks over a bridge which then collapses. The children were asked whether these misfortunes could be the direct result of imminent justice: that is, whether they were caused directly as a result of bad behaviour. Younger children, the findings suggested, were more likely to believe in imminent justice as a cause of misfortune than the older children. The authors concluded that:

> the decline in imminent justice thinking during childhood is caused by the child's growing awareness of the actual causes of events (in this case the causes of illness). (Kister and Patterson 1980)

The growing understanding of the 'actual' cause of events is demonstrated by their increasingly accurate use of the concept of contagion as they grow older. Younger child overextended this concept, for instance attributing headaches to contagion, or not to understand the effects of distance on contagion. Here, growing faith in the rational causes of disease (germ theory) is seen as replacing earlier moralistic accounts, in which behaviour is seen as having direct outcomes such as accidents or illnesses.

RATIONALITY

In these accounts of the early twentieth century accidents are unproblematic. That some misfortunes 'just happen', and that there can be no profit in examining the

cause, is so obvious as to need no explanation. Only the primitive or the child would seek an explanation for mere co-incidence, or be unsurprised if the rules of chance are broken. There are two, connected, explanatory models which render the accidental misfortune as obvious and natural in these writings from the 1930s. One is rationality, a set of beliefs about cause and effect, which holds some effects to be the inevitable and natural outcomes of certain causes. The other is probability, a set of beliefs about the predictability of events. In the accounts of Levy-Bruhl, Evans-Pritchard and Piaget a belief in accidents characterised the developed mind, for which some misfortunes 'just happen'. They are unproblematic because rationality itself is unproblematic.

This is not to argue that by 1930 there had been no debate about the nature, or universality, of rationality. The 'modern' set of beliefs contrasted by Levy-Bruhl to primitive mentality had certainly not been, in 1923, universally held to be rational. As well as those philosophers who had seen rationality as an impoverishment of the human spirit (such as Nietzsche or Rousseau, and, to a certain extent, Weber) others had explicitly questioned the assumption that apparently rational behaviour can be so described. Two hundred years earlier, Hume (1739), for instance, had argued that human action is intrinsically irrational, given that causal relationships are based only on impressions and expectations rather than any direct observation of the link between two events. The expectation that, for instance, pain will be experienced on touching a fire is based solely on our past experience of the succession between the two: we cannot directly perceive the causal relationship, which is merely inferred from repetition: 'objects have no discoverable connextion together; nor is it from any other principle but custom operating in the imagination, that we can draw any inference from the appearance of one to the existence of another' (Hume 1739:184). Further, he argued, we have no rational basis for assuming that this relationship will continue into the future; our avoidance of fire is based on habit not rational decision making. There is no essential difference in the attribution of chance as the reason for an event than that of 'cause', the latter is merely more probable, in that it has happened more often. Rationality as a basis for reasoning is undermined, as 'all probable

reasoning is nothing but a species of sensation' (ibid:183). However, this view of human behaviour had little impact and few disciples: Russell noted that Hume's ideas were a 'dead end' in philosophy and represented the 'bankruptcy of eighteenth century reasonableness' (Russell 1946:698). 'To refute Hume' claimed Russell, 'has been, ever since he wrote, a favourite pastime among metaphysicians' (ibid:685).

As well as such critiques of rationality, there had been attempts at the development of alternative explanatory systems from within the scientific community. One interesting one was the thesis of the Austrian biologist Paul Kammerer, better known for his controversial work in the early twentieth century on Lamarckian evolution. Kammerer's thesis, published in 1919, set out his ideas on 'seriality'. This was an attempt to analyse scientifically the common sense notions of 'lucky days' or 'one thing after another' as well as repetitions in nature (such as the recursive shapes of leaves) in terms of a principle of 'seriality' which, he argued, coexisted with linear natural laws:

> die Serie (Multiplizität der Fälle) dar als eine gesetzmäßige Wiederholung gleicher oder ähnlicher Dinger und Ereignisse - eine Wiederholung (Häufung) in der Zeit oder im Raume, deren Einzelfälle, soweit es nur sorgsame Untersuchung zu offenbaren vermag, nicht durch dieselbe, gemeinsam fortwirkende Ursache verknüpft sein können. (Kammerer 1919:36)[3]

However, the publication of this thesis had negligible impact on the scientific community and no lasting influence. The work has never been translated into English, or reprinted. Perhaps more significantly, it has been claimed that

[3] 'the seriality (multiplicity of causes) presents itself as a systematic repetition of the same or similar things and events - a repetition (building up) in time or in space, with specific causes which may be interlinked, in so far as it is possible to discover by careful investigation, not through the causes working together in a linear way.'

Kammerer's publication of his thesis was a major setback to his career in academic science:

> ... friends implored him to postpone publication until after the meeting of the University Senate which was to decide his appointment. In keeping with his temperament, Kammerer refused the compromise. That was the end of his hopes for a professorship... (Koestler 1975:41)

Even by the early twentieth century, then, rationality was not universally held to be the sole explanation of either human behaviour or of natural events in modern thought, and there were attempts to theorise the universe in a ways in which the 'accidental' might have a role. However, there are some indications that rationality had a dominance and legitimacy secure enough to marginalise the ideas and legacies of those who challenged it, or suggested alternative paradigms for scientific investigation.

In the light of the fate of Kammerer's thesis, it is interesting to compare a (remarkably) similar work by Carl Jung, first published some thirty years later. In his book Synchronicity: an acausal connecting principle (1955), he argued that natural laws, being only statistical truths, have only limited value in explaining natural phenomena as individual events. Chance happenings and coincidences are considered meaningless in terms of the experimental method, which seeks regular patterns, but sometimes incidents seem to fall beyond the bounds of possibility, and suggest some kind of meaningful, if not causal, connection. He cited as an example a day when fish were mentioned or appeared on six separate occasions within twenty four hours; more than would be expected by mere chance (though the cynic might note the day was Friday, and Jung was at the time working on the fish as a symbol) and suggesting, he argued, some meaning beyond that of 'mere' coincidence. Rather than assuming, as a rational method would, that such a large number of coincidences were the result of the random play of chance, Jung proposed a second principle, that of 'synchronicity', to operate alongside the

causal one. This principle (very like Kammerer's concept of 'seriality') asserted that 'the terms of a meaningful co-incidence are connected by simultaneity and meaning' (Jung 1955:95), and occurs in such situations as dreams which are premonitions of future events, or when a psychic state and a corresponding objective process occur simultaneously.

This theory, as an attempt to understand events that have no obviously rational cause, never generated the further research that Jung had hoped for, and had little influence beyond the margins of academia: it was described by one biographer as a 'curious sideline' in terms of his contribution to psychological theory (Fordham 1966:130). It did not, however, have the devastating effect on his career and prestige that his predecessor's, Kammerer's, project did for him, and it is still referenced in popular texts on chance and coincidence (see, for instance, Richards 1985).

Although comparing the fate of two texts separated by thirty years can prove little, it does suggest one possible line of enquiry for situating the accident in terms of the rationality which made it a 'natural' category. If the status of rationality is central to the construction of some misfortunes as accidents, it may be worth tracing some of these debates about rationality in order to situate historically the point at which it became possible to speak about accidents.

Rationality undermined

First, it must be noted that the term 'rationality' itself has been used in so many contexts over the last century that its meaning has been highly contested: indeed it could be argued that it has little meaning left. 'Rational' behaviour has been variously conceptualised, for example, as being based on an economic model of human behaviour, in which actors seek to maximise the satisfaction of their

preferences (see Hindess 1988); in a Weberian sense as describing a 'disenchantment' of the modern world, in which magical and supernatural forces no longer have any meaning, and as relating to the objectivity of scientific logic (Popper 1974) which describes the world in a way which can be tested. The diverse meanings attached to the concept perhaps make it more useful as a ideological label rather than any precise description of actions or beliefs. In the writings of Levy-Bruhl and others in the 1930s the implication was that 'rationality' could be used to describe first a cosmology which assumes a universe governed by known or knowable laws which predict the behaviour of the material environment and, second, perhaps, the extension of that assumption to the social world as a normative ideal.

This 'classic' view of rationality is perhaps best represented by the writings of Karl Popper, first published in the 1930s. Popper is one of the philosophers who was concerned to refute Hume's claim that human action is essentially irrational, and he situated rationality explicitly at the heart of scientific and, by implication, social progress. He argued that first there is a psychological need to discover regularities in the world: 'expectation may arise without, or before, any repetition' (Popper 1974:24), so our beliefs in causal relationships cannot be based on appearance and habit, as Hume had suggested. Second, there is a rational basis for accepting scientific statements, since they are empirically testable and have been subject to critical examination. The basis of this testing is the notion of 'falsifiability': theories can only be accepted if they are capable of being falsified (Popper 1959). Although he accepted that chance may play a part in the causation of events, Popper suggested that the proper level of analysis would be regular underlying structure. Thus water molecules tumbling over a waterfall may appear to move randomly, but on aggregate their behaviour is structured by the known laws of fluid dynamics. Science, he argued, is properly directed at these underlying structures, not at the accidental and unknowable. Despite Popper's arguments elsewhere (Popper 1960) that the social sciences should have the particular and local as a legitimate object of study, he here dismissed chance in human behaviour as simply uninteresting:

> It may be said that some of our decisions are snap decisions, taken without deliberation, since we often do not have time to deliberate...But are snap decisions really so very interesting? Are they really characteristic of human behaviour - of *rational* human behaviour? (Popper 1974:228, emphasis in original)

Although Popper's characterisation of scientific knowledge as built on falsifiable theory has been seen as an idealisation of the process of the production of scientific knowledge (see for instance Kuhn 1970; Wright 1979) and indeed random systems may now be legitimate objects of scientific inquiry, such ideas of rationality dominated in the 1930s and survive, perhaps, as a normative ideal in much scientific discourse today.

Criticism of this orthodox account of the primacy of rationality came from several sources. First, there were those who agreed that Western rationality had achieved hegemony as a normative ideal, but that this had been the outcome of social processes rather than the inherent superiority of rational argument itself. Feyerabend (1987), for instance, argued that this hegemony had been the result of economic and military colonisation rather than the objective superiority of rational argument. 'Western science' he claimed 'has infected the whole world like a contagious disease' (Feyerabend 1987:297).

Historians, also, have undermined the assumption that rationality has any innate or logical primacy as explanation, even where the growth of rationality has been seen as an indicator of progress. Thomas (1978), for instance, in Religion and the decline of magic, charted how the Reformation in England gradually eroded seventeenth century beliefs about the efficacy of magic with the introduction of 'rational' religious beliefs. Medieval beliefs were characterised by rites and practices designed, claimed Thomas, to facilitate direct divine protection or intervention. Such rituals as blessing with holy water, the churching of women and perambulation to bless the crops were attempts to alter the social and physical world through magical means. The new Protestant theology was aggressively

rationalist and pushed out Catholic ritual and the remaining pagan rites which had persisted in Christian guise. Thomas found no wholly convincing argument for the demise of such beliefs, but offered some partial explanations. The first is the rise in experimental science and corresponding advances in technology, which undermined the basis of superstitious beliefs. Even in areas such as medicine, where increases in understanding were not matched by greater efficacy, there was faith in the possibility of technical solutions being found to problems of health previously thought amenable only to supernatural manipulation. Drawing on Weber for his second explanation, Thomas noted that the new Protestant religion relied on the moral worth of trying self help before the invocation of supernatural aid, producing a mental disposition that was not as supportive of magical beliefs. Third, the move from agrarian to industrial production may have had some influence, as life may have been more predictable and amenable to human control in urban centres, and less vulnerable to the vagaries of climate and nature. Thomas was cautious about these explanations, but his presentation of modernity as a rational belief system, contrasted with earlier 'superstitious' beliefs that were in some way associated with a world that was more mysterious and less well understood than our own, is dependent on an examination of social processes, rather than the self-evidently superior explanatory power of rationality.

If attempts to delineate the particular historical and social circumstances necessary for a belief in rationality are one source of debate around the universality and 'obviousness' of rational belief systems, then Feyerabend's suggestion that other cosmologies may have a more 'functional' approach to misfortune provided a second: a moral questioning of how far rationality could provide meaning for misfortune. In his essay Farewell to Reason, Feyerabend idealistically contrasted the functional value of the cosmologies of pre-colonised peoples with those whose only recourse is to rational explanatory systems. Western science, he claimed:

> not only destroyed spiritual values which gave meaning to human lives, it also damaged a corresponding mastery of the material surroundings without replacing it by methods of comparable

> efficiency. 'Primitive' tribes know how to deal with natural disasters such as plagues, floods, droughts - they had an 'immune system' that enabled them to overcome a great variety of threats to the social organism (Feyerabend 1987: 297)

In this view, Western rationality has been successful, but such success is to be deplored not celebrated. Such sentiments echo to some extent Weber's description of the 'disenchantment' of the modern world, and continue in anthropological debates around the limits of Western rationality in terms of its ability to provide solace or spiritual meaning for misfortune. Although modern rational explanations can encompass what Evans- Pritchard called the 'general and universal', they fail completely, it is argued, at the level of the 'particular and variable conditions' of a misfortune. Although anthropological debate about cosmologies such as that of the Azande later questioned the extent to which witchcraft beliefs were in any sense 'functional' for society (see for instance Gillies 1976), what was notable in Evans-Pritchard's descriptions was the relative paucity of the explanations he could offer as alternatives to witchcraft. In this case, for instance, he took issue with a boy who has a festered wound from an injury 'caused' by stubbing his toe on a tree stump:

> I always argued with the Azande and criticised their statements, and I did so on this occasion. I told the boy that he had knocked his foot against the stump of wood because he had been careless, and that witchcraft had not placed it in the path, for it had grown there naturally. He agreed that witchcraft had nothing to do with the stump of wood being in his path but added that he had kept his eyes open for stumps, as indeed every Zande does most carefully, and that if he had not been bewitched he would have seen the stump. (ibid:65-66)

Just as Levy-Bruhl could offer no explanation of the misfortune of being eaten by an alligator other than the coincidences one might statistically expect if a 'rational'

approach to the dangers of alligators is adopted, Evans-Pritchard could not really begin to engage with this boy's need to know why this stump surprised him in the bush, and why the cut was taking so long to heal. We moderns, too, it has been argued, may understand the general laws which dictate that a certain event has happened because of the random play of coincidence, but may still want to know why a misfortune has afflicted our lives at a particular moment. Rationality, though, could not be expected to provide an answer.

The shortcomings of rational explanatory systems in terms of their ability to provide meaning for personal misfortune has been well documented. Comaroff and Maguire (1981), for instance, described the 'search for meaning' engaged in by parents of children diagnosed as having leukaemia. Despite the advances brought by scientific rationality which led to increasing understanding of the disease and its treatment, there was a gap in explanation at the level of the meaning of misfortune. Faced with uncertain prognosis, both of outcome and duration, the parents attempted to discover all they could about the aetiology and prognosis of the disease. Their search went beyond the limits of medical knowledge as they wondered why this had happened to them and what their children's individual chances were, reflecting on possible environmental causes that may have affected their children and examining statistical forecasts to guess at the prognosis for their child. The need to understand the 'coincidence' of 'why me' may well, they suggested, be universal.

Western medicine, it could be argued, has no remit to answer moral or existential questions: that, in our culture, is the province of religion. Medicine as a belief system has, though, been cited as undermining the ability of other belief systems to supply legitimate explanations for misfortune. The dominance of rational explanatory systems has left other belief systems no longer able to supply meaningful answers either: there is no respectable body of beliefs to draw upon. A study of infertile couples (Greil et al 1989) looked at how some such couples, who were trying to conceive, made sense of this misfortune. The authors concluded that religion did not provide much comfort or explanation for the situation they

were in: that of wanting desperately to have children, but being probably unable to have them. Technical advances have, they claimed, made it possible for more couples than before to conceive, but:

> the developments which have made infertility easier to deal with on a practical level may make it more difficult to deal with at the cognitive level (Greil et al 1989).

Religion only became important after the couples had children, it did not give meaning to the suffering. As the authors put it, the couples had no 'theodicy of misfortune'. At least in certain situations when there is a need for explanation beyond that of coincidence, a rationalist world view has been seen to fall short. Evans-Pritchard noted an Azande saying: 'Death has always a cause , and no man dies without a reason' (Evans-Pritchard 1937: 111). In their cosmology a plurality of causes was recognised. In a rational discourse there are no legitimate explanations that address the particular causes of misfortunes at particular times; these are merely the result of 'coincidence'. In the second half of the twentieth century, the assumption that this, rationally derived, explanation was adequate had been challenged.

A third challenge to the consensus around rationality was also engendered in part by the anthropological writings of Evans-Pritchard and others, and centred on questions of relativity: to what extent was it possible to judge the rationality of a culture such as the Azande by using the criteria of another? This debate started in the 1960s, when Winch (1964) contested that Azande beliefs were not illogical (as Evans-Pritchard, claiming that they did not accord with objective reality, had implied) but rather that our definitions of rationality are social constructions that may have no relevance outside the Western cultural tradition. To evaluate Azande beliefs from the standpoint of Western science is thus a pointless ethnocentric exercise. Considerable debate followed, and has continued ever since (see, for instance, Wilson 1970; Bloor 1976; Hollis and Lukes 1982; Overing 1985; Lash and Whimster 1987; Hindess 1988). In essence, one refutation of Winch's

'relativist' argument was that rational scientific explanations were superior because they were empirically testable, and that it was therefore reasonable to judge other beliefs by them. Others pointed to the technical superiority of modern Western culture to demonstrate the theoretical superiority of modern scientific thought (see, for example, Taylor 1982). Others made broader philosophical attacks on the kind of relativism Winch was suggesting (see Lukes 1982; Hollis 1982), arguing that a 'strong' programme of relativism was undermined by the self-evident universality of certain beliefs held by all people, irrespective of culture, and by the paradox that relativistic logic should be reflexive, so making a strong relativist position logically untenable. Horton (1970) argued that the debate about the application of Western rational criteria to African practices may be misinformed not because the protagonists could never understand African beliefs, but because they were ill informed about Western science and theory. To anyone with a detailed understanding of the theory of Western science, African practices may look remarkable similar, and are therefore essentially rational. The only difference is that they may have no developed 'Logic', which Horton defined as the ability to generalise rules for distinguishing 'good' from 'bad' arguments.

It is not intended to detail here the various positions in these debates about rationality and relativity, or to assess their merits. Rather, it is enough to note that first, this debate was largely about other cultures, and interpreting the findings of anthropologists: a rational ideological hegemony was still assumed in the West. Winch (1964), for instance, considered apparently 'irrational' practices in the West (such as a belief in astrology or attendance at a Black Mass) to be safely dismissed as such, unlike the beliefs of the Azande. Such modern practices, he claimed, took their meaning from contemporary scientific modern practice, and could not be understood other than in relation to those rational practices. Second, the very existence of the debate is perhaps the most salient issue for this argument: that in 1964 it was possible for Winch to question that assumption of rationality that Evans-Pritchard could take for granted in 1937.

The fourth, and most recent, attack on the notion of rationality is perhaps the inverse of Feyerabend's assumption: that rationality (as embodied by Western science) is not inevitably all conquering, but that it is inherently precarious, and liable to dissolution. If the 'rationality debate' of the 1970s and 80s assumed, to a large extent, a rational hegemony in the West, then the most recent attack has undermined even this. This is (loosely) the starting point of many 'post-modern' theorists, who focus on the heterogeneity of current ideas and possible world views, sometimes implicitly contrasting the 'post-modern' with earlier times when ways of thought were supposedly more integrated. As Smart puts it: 'It is argued that the modern *episteme* was fragmented from its inception - that it "exploded in different directions"' (Smart 1990).

Such arguments celebrate not the dominance of rationality but the heterogeneity of current intellectual thought. Lyotard, for instance, examines the concerns of the scientific community, which he claims are fragmented and discontinuous, with paradox being at the very centre of the notion of scientific thought. He cites quantum theory, the uncertainty principle and Mandlebrot's work on fractal patterns as evidence that scientists are no longer concerned to situate themselves within a linear progression and no longer seek representations of the world as it is, for the world has been exposed as an unstable system:

> Postmodern science - by concerning itself with such things as undecidables, the limits of precise control, conflicts characterised by incomplete information, *'fracta'*, catastrophes, and pragmatic paradoxes - is theorizing its own evolution as discontinuous, catastrophic, non-rectifiable and paradoxical (Lyotard 1986:60)

With this crisis in the 'hard' sciences and the post-modern critique, claims Lyotard, the whole question of rationality is an open one: 'there is no reason, only reasons' (Lyotard, in van Reijen and Veerman 1988).

One example of what Lyotard describes as 'undecidables' in science is the interest in theories of chaos in the natural sciences, which are directed at what might be called the 'accidental' outcomes of natural laws, such as the water cascading apparently randomly over Popper's waterfall. Whereas Popper dismissed these phenomena as scientifically uninteresting, 'chaos' theories attempt to reconcile deterministic and probabilistic explanations of apparently 'chaotic' systems which do not have outcomes which are exactly predictable (Percival 1992). Examples might be turbulence, in which the exact end position of a given water molecule could not be predicted from knowing the initial position and conditions of the system, or the movement of a forced pendulum. In such systems tiny changes in initial conditions can lead to large and unpredictable changes in their development, so purely deterministic laws, however well the variables involved are understood, are of little use in predicting outcomes at the local level. The weather is a familiar example of such a system: in the medium term we can predict that for instance the summer in Britain will be hot and mainly dry and that the winter will be cold, but in the short term (tomorrow) we can only make probabilistic predictions based on the possible trajectories of current conditions. Whereas classical Newtonian physics treats such local randomness as 'noise', and provides a mathematical term for the uncertainty that results, chaos theory posits a new set of laws which determine the patterning of these trajectories. Thus weather conditions may appear random, but are determined not by linear laws linking variables together, but by 'strange attractors' which are represented as the shapes which pattern the field of all possible weather states (Palmer 1992). In a simplified model of a weather system with only three determining variables, this attractor will have a three dimensional shape. Although the trajectory of individual weather conditions appears random if we try to predict outcomes with linear laws, the field of possible outcomes is clearly patterned. Such an attractor has a regular 'shape': it represents the regular laws which determine the system. An analogy could be made with the unconscious 'deep structures' of the structuralists, which pattern the apparent trivia of cultural life such as characters in folk tales, or the kinds of food we eat. The current scientific interest in non-linear systems, it could be argued, is evidence of a desire to extend rational explanation to new areas of the physical

environment (such as turbulence and short term climatic change), previously thought to be outside the remit of theory, as much as it is of a theoretical crisis. If Lyotard is citing the interest in such subjects as evidence of a 'crisis' in science, it is perhaps equally possible to see it as evidence of confidence and expansion. Chaos theory in some senses extends the possibilities for rational science (one which integrates stochastic and deterministic laws) as much as it undermines its base.

Indeed, it has been claimed that science in the West is characterised by few competing schools of thought (Kuhn 1970:209), and if there is any one unifying theory it is surely that of scientific causal logic. We assume the universe and everything in it is ordered and potentially predictable, even if our models are not yet sophisticated enough to predict accurately.

For now, it may be useful to put these recent challenges of modern multiple rationalities to one side, and place 'rationality' at the level of an ideology of periodisation rather than empirical description of systems of knowledge, and see how the accident could be seen to emerge as a category of misfortune necessitated by that discourse. The idea of rational hegemony may be in decline or may be mythical, but the ideological force of rational ideas in our understanding of the world has been a powerful one. In general, in the first half of the twentieth century the persistence of other explanatory frameworks is seen as anachronistic, and the superiority of rational explanation was assumed in contrast with other times and places which were or are less 'rational'. One of the defining features of this rational view was seen as the acceptance of the limits of rational explanation: that is, that there can be 'accidents', events whose causation is coincidental and thus could not be predicted.

Against a consensus about rationality the accident, then, was a given. That accidents happened was taken for granted, uninteresting and hardly the subject of scholarly enquiry. Only in domains which defined the boundaries of rationality (the verdicts of medieval coroners, the minds of primitives and children) were

accidents noteworthy - and that was for their absence. The next chapter will go on to examine what happened to accidents when this consensus around rationality became fractured.

There is, then, a case for the importance of an ideology of rationality for constructing the idea of an accident. It may now be useful to return to the concept of probability as the other strand identified as contributing to making accidents possible. If it became possible to talk about accidents in 1930 (if only as events given significance by their absence from other, non-rational, arenas), how did they become linked, as categories of misfortune, to a rational view of the universe? What conditions made possible Levy-Bruhl's view that only the modern mind could comprehend that accidents happen?

THE EMERGENCE OF THE ACCIDENT IN THE WEST

The OED gives three versions of the main meaning for the word 'accident'. The first is an obsolete sense: 'anything that happens'. The second and third are those contemporary ones with which we are concerned here: 'anything that happens without foresight or expectation' and 'an unfortunate event, a disaster, a mishap'. A medical definition is also noted as obsolete: 'an occurring symptom'. If we look at how writers from the early seventeenth century in England used the word 'accident' there is no notion of an unmotivated act. The second and third definitions that we recognise today do not seem to have occurred before the end of the seventeenth century. How did it become possible to describe some misfortunes as arising without foresight or expectation?

Logically, and following from the discussion of rationality above, the conditions of possibility for accidents to happen are first the emergence of a rationalist view of causation, in which the patternings of events are seen to be determinable and

predictable, and second a corresponding belief in probability to explain the particular distribution of events. An accident appears in the gaps left by a rationalist cosmology, at the limit of deterministic laws, but where superstition no longer has a legitimate part to play.

These gaps in rationalist explanations emerge between what is known for sure (ie that which is subject to deterministic laws, such as those describing the motions of planets around the sun, or gravity on the earth) and that which is known statistically (ie that which is subject to the laws of probability, such as the chance of reaching a certain age or of dying of a certain disease). At a local, or individual level, there is little that can be known for sure. Rationalist laws governing most of the areas of life in which misfortunes are likely to occur are statistical, not determinist. The probability of various life events and kinds of death can be known, and thus the chance of them happening to an individual, but this is of little use in explaining personal misfortunes. As probability may, then, be important to an understanding of accidents, the work of Hacking (1975) on the emergence of probability in the West is taken as a starting point.

Hacking (1975) regarded John Graunt's 1662 publication of his Natural and political observations on the bills of mortality (Graunt 1662) as the first extensive set of statistical inferences made in the West. These observations on the bills of mortality were an attempt to define the risk of dying from various causes and laid the foundations of the modern science of population statistics. Hacking (1975) situated Graunt's work in the context of emerging ideas about probability, evidenced by Pascal's use of probabilistic reasoning to establish a pragmatic rationale for the belief in God; Leibnitz' application of probability to legal problems and Huygens' publication of the first textbook on probability which all appeared in the second half of the seventeenth century. That a science of probability became possible in the West at this point in the mid seventeenth century was, claimed Hacking, to do with the dual nature of the emergent concept of probability; it was at the same time 'aleatory' and 'epistemic'. That is, it referred to both stable frequencies (an event is 'probable' because such events

have a statistically calculable chance of occurring) and to degrees of belief (an event is possible because we know that such an event can occur). This concept replaced the 'probabilism' of the sixteenth century, which referred to the approvability of an opinion: a probable happening or opinion was one attested to by eminent or respected authorities. This 'probabilism' of the sixteenth century was despised by the discoverers of the new probability such as Pascal. To account for why a new concept of probability entered European discourse towards the end of the seventeenth century, making possible the science of statistics, Hacking examined shifts in scientific thought, and emergent concepts of evidence and deduction.

Evidence, as we now understand it, argued Hacking, appeared only by the end of the seventeenth century. Previously, 'evidence' was rooted in authority: the testimony of learned authorities. The distinction between such testimony and the evidence of things (empirical evidence) is relatively recent. In 1662 the Port Royal Logic described the distinction as being one of external evidence (the testimony of authorities) and internal evidence, from the existence of things. This idea of internal evidence was a new one, rooted in the idea of causal inference: that one could infer one thing from another. Such internal evidence was different from the 'signs' of the Renaissance period, which were based on verisimilitude. Although signs were things and not written testimony, argued Hacking, and were utilised as evidence, this was on the basis of their similarities, or correspondences with what they signified. Thus nature (in the signs of the stars, or the climate, or the symptoms of disease) could be 'read' in the same way as the testimony of learned authorities. The relationship of a bodily sign with a corresponding disease was not conceptualised as a causal one, though: the disease did not 'cause' the sign, but was signified by it. Probability, argued Hacking, only became possible once signs were conceptualised as internal evidence, from which causal chains could be inferred, rather than as merely the testimony of the natural world.

Thomas Lodge (c1558-1625), a poet and author who went on to study medicine late in life, published his Treatise of the Plague (Lodge 1603), which perhaps

illustrates the testimony of authorities and the evidence of signs in its advice on avoiding and curing the plague. Lodge claims to have:

> ...faithfully gathered out of the most approved Authors, (especially out of certaine notes which I received from Valenolaeus sonne, now Doctor of Phisique in Arles in Province) a true Methode how to know and cure the Plague (Lodge 1603:A4).

As well as such authority, he also cites the signs of the plague in nature. Plague can be authoritatively predicted:

> If the Winter be hot and moist, and observe not his natural temperature and when the Spring time is dry without rain... Moreover, if at that time there appears any increase of such creatures as engendered of putrification, as wormes of the earth, flies, gnattes, eales, serpents, toads, frogs and such like foretelling corruption and putrification on the earth and waters, and when the aire the same day changes from faire to foule, and from clear to cloudy....(Lodge 1603:C2)

This notion of the sign included the idea that it could be believed because it could be trusted: the appearance of toads and frogs heralding the arrival of a plague epidemic was to be believed because this had happened before in nature. It now became possible to argue deductively, from observed effects to hypothetical causes. Internal evidence, the basis of new probabilistic reasoning, could be distinguished when conventional signs were finally separated from natural signs. The former are the arbitrary signs chosen at will, such as the names of stars and substances which were once thought to have intrinsic meaning. As an example of the possibilities open when internal evidence can be distinguished from the external evidence of authority, Hacking quoted Hobbes from 1650 from Human Nature IV 10, who somewhat preempted Hume:

> the signs are but conjectural; and according as they have often or seldom failed, so their assurance is more or less; but never full and evident: for although a man has always seen day and night to follow one another hitherto, yet can he not hence conclude they shall do so eternally; experience concludeth nothing universally. If the signs hit twenty times for one missing, a man may lay a wager of twenty to one on the event, but may not conclude it for truth. (Hobbes 1650, cited in Hacking 1975)

As the modern notion of probability became possible, the science of statistics could emerge as the study of quantitative facts about the state and its population. As an example, Hacking cites the City of London's weekly tally of christenings and burials from 1603, which were kept to detail the current state of the plague. It was not until Graunt's notes on the Bills of Mortality were published in 1662 that anyone made such use of them. Until then, when the data could be seen as 'evidence' from which conclusions could be drawn, these data were merely 'signs' of the plague, correspondences to it, and not data which could be examined in this way:

> Once it became possible for a Graunt or a Petty to look at the data as data, and not as a "signature" of the plague, it was possible to draw a great many inferences (Hacking 1975:106).

Hacking's argument is important for a study of accidents because these new ways of conceptualising evidence and probability also provided new ways of thinking about cause and how it was to be attributed. It might, then, be useful to revisit some of the seventeenth century writings examined by Hacking, together with a sermon by a preacher of the period, Samuel Ward (1577-1640) to trace how this new discourse of probability, together with the emergent consensus around rationality, could also produce the accident as a marginal category of misfortune.

First, the word 'accident' itself, in terms of the meanings defined by the OED above, rarely occurs in these writings. Most often the word accident referred simply to a happening, undistinguished in cause from any other. Writing on the Plague in 1603, Thomas Lodge used the word in this 'obsolete' sense of an 'occurring symptom':

> The most troublesome or dangerous accidents in this Sicknesse are weakness of vertue, faintings of the heart, soundings, raving or frenzie... (Lodge 1603:K2)

Accidents were here the deteriorations or 'events' in the course of the illness and nothing more.

So what were happenings with no discernable motivation or will, those we would categorise as accidents, called in the early seventeenth century? It appears that there was simply no need to distinguish them from those more culpable acts or those with some definable motivation. Samuel Ward, for instance, in a sermon entitled Woe to Drunkards, listed the many misfortunes that befall those who drink. These were attributed to the direct judgement of God, to whom drunkenness is an odious sin, punished by all manner of untimely ends. He listed numerous examples of such misfortunes, including deaths from diseases we would describe as arising from alcohol use, such as a man who 'having surcharged his stomacke with drinke, hee fell vommiting, broke a Veyne, lay two days in extreme paine of body & distresse of mind, till in the end recovering a little comfort, he died.' (Ward 1622:24-25) Other misfortunes included injuries sustained while drunk, including a:

> man 85 yeares old, or thereabout, in Suffolk, overtaken with Wine [who] going downe a paire of staires ••• fell, and was so dangerously hurt, as hee dyed soone after, not being able to speake from the time of his fall to the time of his death. (Ward 1622:29)

Although drunkenness was seen to be an apparent cause of this and other fatalities, it was not the ultimate cause, which was God's retribution. Misfortunes which were not associated with the victim's own drunkenness were therefore also subsumed under the same explanatory framework: thus a woman who had persuaded three men to stay to drink some more was 'suddenly taken speechlesse and sicke, her tongue swolne in her mouth, never recovered speech, the third day after dyed' (Ward 1622:20). Her misfortune, though not 'caused' directly by the action of alcohol was attributed to the moral culpability incurred by encouraging others.

We would now perhaps divide such misfortunes into three distinct categories with very different moral content: effects of disease as a result of alcohol use, injuries arising from drunkenness (both of which are seen as somewhat blameworthy) and true 'accidents'; injuries sustained by people who may be drinkers but who were not inebriated at the time. Those injuries not attributable to the causal effects of alcohol use we would have no ready explanation for, but within the moral universe of Ward's God there was no need for such a category since the judgement of God was an all embracing explanation. The sin of drunkenness is the ultimate cause of all the misfortunes to which drinkers are prone, through the intervention of a righteous God. There was no need, within such a universal explanatory framework, for a category of events for which no cause was known.

By the 1660s, though, a dramatic change had occurred. We find the beginnings of the concept of a category of events which are not regular and which not do fit within a predictable pattern. At this point, which Foucault holds to be the break between Renaissance and Classical forms of knowledge, what we are here defining as 'rational' ways of thinking are beginning to gain precedence, and the study of disease and mortality was no exception. Graunt, writing on the Bills of Mortality in the second half of the seventeenth century, had an approach to investigating causality that we would recognise as essentially 'rational':

> ...among the several casualties some bear a constant proportion unto the whole number of Burials; such are the chronic diseases, and the diseases whereunto the City is most subject; as for example Consumption, Dropsies, Jaundice, Gowt, Stone, Palsie, Scurvy, rising of the Lights, rickets, aged, agues, Feavers, Blood Flux, and Scowring: nay, from Accidents, as Grief, Drowning, Mens' making away themselves and being killed by several accidents &c do the like, whereas Epidemical and Malignant diseases, as the Plagues, Purples, spotted Feaver, Small Pox and Measles do not keep that equality, so in some Years or Months there died ten times as many as in others (Graunt 1662:18)

Using the new possibilities of probabilistic reasoning, Graunt differentiated a certain group of diseases (consumption etc) as being perhaps unpredictable in their effect on individuals, yet predictable in their effect on the population of London as a whole. There were also, though, diseases which have no such apparent pattern; the epidemical and malignant diseases. So here, although 'accident' still referred to a group of happenings distinguished by the suddenness of their effect or the externality of the cause of death, rather than their exclusion from a pattern, there was the notion of happenings which do not 'bear a constant proportion to the whole'. He brings accidents into that pattern: they are made predictable on a magnified scale, yet there is also the notion equivalent to ours of cases which don't fit *yet*. This notion is perhaps a vital condition of possibility for 'accidents' as we know them to occur, as a temporary categorisation of a lack of cause, waiting for inclusion through aggregation, which constructs individual misfortunes as part of population rates. The events which did not fit in Graunt's scheme are the epidemics, for which he had not established a predictable pattern from his study of the Bills of Mortality. Graunt later listed some of the events which we might now label as accidents, claiming that it is not worth examining them too closely as they are not amenable to the discovery of regular patterns:

> We shall say nothing of the numbers of these that have been Drowned, Killed by falls from Scaffolds, or by carts running over them &C, because the same depends on careful Trade, and Employment of men and upon matters which are but circumstantial to the Seasons, and Regions we live in; and affords little of that Science and Certainty we aim at. (Graunt 1662:23)

Graunt's project in these Observations quoted above was in some senses emblematic of the beginnings of the process of rationality, although tentative in that it excludes cases which will not exhibit 'Science and Certainty'. It was an attempt to calculate the risk of various kinds of death in an 'objective' way, untainted by the subjective fears people have of different risks. He appealed to empirical evidence to calculate the exact chance of death from various causes:

> ...whereas many persons live in great fear, and apprehension of some of the more formidable and notorious diseases following; I shall only set down how many died of each: that the respective numbers, being compared to the total 229250, those persons may the better understand the Hazard they are in...(Graunt 1662:16)

This use of empirical evidence (the essential substance of this new rationality, as well as probability) contrasts neatly with Lodge's appeal to medieval 'proof' quoted above: that of learned authority. It is not merely that Graunt's 'science' was true whereas Lodge's was not, but that between 1603 and 1662 it became possible to frame an argument in terms which became recognised as having a rational appeal to logic and evidence. By the end of the seventeenth century Petty, also writing on mortality statistics, could confidently dismiss arbitrary or non-rational causes as having no relevance to his scientific project. Reviewing changes in the population of London, he wrote:

> what reason to assign the like increase from 1604 to 1642 I know not, unless I should pick out some Remarkable Accident happening

> in each part of the said period and make that to be the Cause of this Increase (as vulgar People make the cause of Man's Sickness to be what he did last eat) (Petty 1699:27)

'Remarkable Accidents' were now causes not worthy of serious consideration. Using the new found rationality in political statistics, Petty could then separate what had for Graunt been irregular features, such as plague years, and place them neatly into the larger pattern of predictable population shifts. He predicted, for instance, the time it will take for London's population to double by calculating population increases based on bills of mortality and

> including some allowance for Wars, Plagues and Famines, the effects whereof, though they may be Terrible at the Times and Places where they happen, yet in a period of 360 years is no great matter in the whole Nation (ibid:18)

When Ward and Lodge were writing at the beginning of the seventeenth century they had no need to appeal to the accidental as a cause of mishap. By the end of the century, Petty's 'Remarkable Accident' was not only a necessary part of the rational world view, to explain that which did not fit a pattern, but also a despised one which could be dismissed as irrelevant to the emerging scheme or put to one side until a place could be found. Accidents were essentially the remnants of an emerging classificatory system: left-overs that demonstrated its boundaries.

A boundary category

The limits to this new cosmology, in which death rates and the behaviour of populations were as worthy of study as the physical laws which were seen to govern the universe, necessitated a category of events which could not be

explained. These were the random, unimportant events that could be concealed by the aggregation of Vital Statistics or dismissed as simply unimportant as single events - as the causes given merely by 'Vulgar People'. Misfortunes such as death and disease gained a new meaning beyond that of individual tragedy: they could now be interrogated as evidence for the predictable and patterned behaviour of populations. Some misfortunes, however, could not be so neatly described by the predictions of the mortality reports, as a universe governed by natural laws is fallible. In the new order, it is first the epidemics which lie outside such patterns, then, when they are incorporated as temporary deviations through the analysis of populations over time, there remain only the violent or 'unnatural' deaths, a diverse category defying any description other than that of a remainder. Deaths from intentional violence have some moral meaning, and the others, accidents, emerge as a necessary category of event, falling on the boundary between those for which no cause was needed (the random and individual misfortunes which are of no discernable consequence for the population as a whole) and those for which a cause was needed, but none could be provided by the new rational sciences of statistics and population studies.

There is, though, a tension here. Belief in 'accidental' causes, in the 1930s, demonstrates modernity. Tracing the emergence of rationality and probability in the West points to the possibility (or perhaps, even, necessity) for a category of 'accidental' events and explanations. However, although 'accidental cause' can only be understood as a concept in relation to the rational, already we have Petty dismissing such explanations as uninformed. The modern belief in a rational universe would hardly have been sustainable without a belief that some misfortunes just happen, yet accidents stand as a challenge to these emerging modern explanatory systems, to be brought within the laws of determinism and probability where possible. This is perhaps the paradox which underpins both the relative neglect of accidents as misfortunes and the difficulty in developing a sociology of accidents: they are specifically defined as being unworthy of study, as being what is left over after we have explained all we can. As accidental injuries constitute the remnants of nosology, so the accidental in social life appears from

the events deemed worthy of no further enquiry; the left overs of our explanatory system.

In the early years of the twentieth century, then, the modern era was described as being dominated by a rationalist cosmology. This cosmology dominated an understanding of events in the material and social world, including misfortunes, until the consensus was fractured by both scientific criticisms (of the assumption of rationality in models of belief and behaviour) and moral criticisms (of rationality itself). Against a rational consensus, the accident is notable only when absent. For Evans-Pritchard, the absence was noted in his description of Azande thought, which countenanced no meaningful distinction between what we would call an accident and any other kind of misfortune. He described a cosmology in which all misfortunes - damage to property, personal injury, failure in hunting - were amenable to the same types of explanations and remedies. There was an agent (witchcraft) potentially responsible for all unwelcome events, so there is no logically possible category of events for which the cause cannot be explained, or which are apparently unmotivated. It is only when there are supposedly rational causes for most misfortunes that a marginal category can arise: that of events for which we cannot logically explain why they happened when they did. They are a despised 'given' of a rational cosmology, unworthy of scientific study unless absent.

Accidents, perhaps, retain a power to disturb simply as a reminder of the limits of rational cosmologies, and of our tenuous control over the worlds which they describe. Rorty (1986) finds in this a more fundamental reason for the neglect of accident and accidental explanation in social theory. In reviewing Foucault's Archaeology of Knowledge, he suggests that if we do as Foucault bids, and 'accept the introduction of chance as a category in the production of events' (Foucault 1972:23, quoted by Rorty 1986), then this would provide a glimpse of an impossible, or at least untenable, culture:

> If we once could feel the full force of the claim that our present discursive practices were given neither by God, nor intuition of essence nor by cunning of reason, but *only* by chance, then we would have a culture which lacked not only a theory of knowledge, not only a sense of progress, but *any* source of what Nietzsche called 'metaphysical comfort' (Rorty 1986:48, emphasis in original).

Rorty is perhaps taking an extreme view of the consequences of a Foucauldian 'archaeology', which rejects any notion of progress, or continuity, or the search for historical origins. An examination of 'accidental' causes does not necessarily preclude a theory of knowledge, but merely encourages a scepticism about any assumed 'causal' or evolutionary progression.

What is suggested here is not a prioritisation of the accidental as determinant of social life, but rather an examination of the rules by which some events or causes have been relegated to the status of 'accidental'. The very act of observing a group of accidents dissolves them, in either the statistical patterning of epidemiological enquiry, or in a Freudian search for meaning. We only observe the apparently irrational in order to discover the rational 'true' motivation, whether in the spirit of Durkheim, or that of structuralist theory, which attempts to uncover deep patternings underpinning superficial discontinuities. Until recently there has been no place in social theory to take the accident as granted and examine its place in the way we make sense of the world. Rather than seeing the accident as epiphenomenal of a deeper rationality or as irrelevant in the grand sweep of social explanations, it might be helpful to focus on the accident itself as an ideal type of event: that which, by consensus, is morally neutral and which lies both outside the bounds of rational explanation and on the boundary of our concerns about health and illness. To follow from Mary Douglas (1984), the boundary category may be the most informative about our classificatory systems. In moving on from the consensus around rationality in the 1930s, to more contemporary constructions of the accidental, it becomes clear that the boundary around what is explicable has radically shifted, and the tension between the

accident as both a necessary and a despised category of misfortune in rational cosmologies takes on a new salience.

CHAPTER FOUR

RISK AND THE ACCIDENT IN CONTEMPORARY DISCOURSE

INTRODUCTION

In the previous chapter, two potential answers to the question 'When did it become possible to have an accident?' were suggested. The first was the late seventeenth century, when the emergence of modern rational explanatory systems in the West enabled some misfortunes to be classified as 'accidental', in that they were ideally neither motivated nor predicted. Indeed within a general cosmology which has been characterised as 'rationalist', the accident becomes not only possible, but necessary. The accident produced by this discourse is an unintended and morally neutral misfortune, one which sits outside available explanatory laws and describes a category of left-over misfortunes, which are inexplicable.

The second answer is perhaps to a slightly different question: 'When did it become possible to talk about accidents?'. This was the 1930s, when a self-conscious 'modernity' enabled accidents to be spoken of, as indicators of that modernity and, in some senses, definitive of it. Only the rational, modern and mature mind could comprehend that some events 'just happen' and that there can be no profit in seeking an explanation of them.

However, it was also suggested that such an unproblematic account of accidents was made possible in the early part of the twentieth century because rationality itself was relatively unproblematic. Once the consensus around rationality had

been fractured, the tension between the accident as necessary to rational explanation, but also despised by it, becomes more apparent. In contemporary Britain there are signs that the accident as a kind of misfortune occupies a rather different space to that natural and obvious category of the 1930s: the accident, like rationality, becomes somewhat problematic. This chapter locates the accident in the late twentieth century as the product of a radically different discourse to that of rationality: namely, that of risk and its calculability.

Accidental cause as anachronistic explanation

The first indication that accidents occupy a rather different location in late twentieth century classifications of misfortune is the finding that a belief in accidents, rather than indicating a specifically modern mentality is presented in some literatures as, on the contrary, rather anachronistic. Those individuals who adhere to explanations of events which involve fate, luck or chance ('accidental' causes) have been characterised as somewhat irrational. One of the most influential works in the field of the psychology of cause attribution, at least in terms of citation (see Rotter 1982:145), has been the development of the internal-external locus of control construct, which was designed to identify the extent to which ideas of fate and chance were important to individuals, rather than belief in self determination and ability to control one's own destiny. Rotter characterised belief in accidental explanations of events as an instance of 'external' factors; forces outside the individual. A strong 'external locus of control' implies that accidents, fate and chance have more salience in providing meaning for events than factors such as behaviour which can be controlled by the individual.

Although Rotter claimed explicitly that the external pole of his continuum was not by definition the negative one (Rotter 1982:272), and that extreme scores on either end of the continuum indicated 'pathological' beliefs, the implication of much of his writing was that the external pole is the negative one. The definition of an

external locus of control is a belief in the power of 'luck, fate, chance or powerful others' to control the outcome of behaviour. In his original article, Rotter quotes Veblen on a belief in luck being characteristic of 'primitive' societies and claims that behaviour based on 'accidental' reinforcements will lead the subject to: 'learn the wrong things and develop a pattern of behaviour which Skinner has referred to as "superstitious" ' (Rotter 1966). Such an evaluation is difficult to reconcile with a claim that the external locus was not interpreted to indicate pathological beliefs. Even with later revisions such as the Interpersonal Trust Scale, which differentiated those who react to a belief in external control with passivity from those who use the belief defensively, much of the use of Rotter's work has been implicitly to define individuals with a strong internal locus of control positively. One obvious application of these models has been in the field of health promotion. Although recent theory in health promotion is somewhat more sophisticated, citing its agenda as 'empowerment' rather than a more paternalistic 'education', much of the research on lay views of health has implicitly used this notion of an 'internal locus of control' to identify individuals who are most likely to react 'rationally' in the field of health behaviours. The person who considers that internal factors (such as their health seeking behaviour) have the most salience for whether they stay healthy is most likely to be receptive to messages about how to alter their behaviour in a healthy way. Those who see health as a matter of chance or accident are less likely to be receptive. Specific Health Locus of Control scales have been developed (see, for example, Wallston et al 1978), which have identified three dimensions: Internality, Powerful Others and Chance. People who score high on Chance and low on other scores have, for instance, been hypothesised as being 'fatalistic; [with] poor use of all services' (Bradley et al 1990). The likely impact of health promotion messages will, in this model, differ in terms of how fatalistic the target population is. This 'fatalism' has been linked to both lower social class (as indicated by education and home ownership) (Pill and Stott 1982) and ethnicity (Laungani 1989), although more recent work suggests that 'fatalistic' beliefs are as prevalent among the middle classes (Davison et al 1991). To risk overstating the case, the extensive use of Rotter's scale has meant that beliefs in fate and the 'accidental' causes of ill health have only been

studied as irrational lay beliefs; anachronistic and dysfunctional within the modern rational corpus of belief. One example of this contemporary view is provided by some statistics produced by the Lake District Search and Mountain Rescue Association (LDSAMRA c1992).

An example - mountain accidents

In these statistics lie an illustration of how a specific category of misfortunes labelled as accidents - those which happen on mountains - are created by one voluntary organisation. In their report there are several clues to a rather different construction of the accident to the one made possible by developments in probability in the seventeenth century. First, any belief in bad luck or fate as the cause of injury is seen as negligently irrational or ill-informed. The Lake District and Mountain Rescue Association's annual report on incidents from 1991 describes 255 'mountain accidents', which cover injuries sustained while walking and climbing as well as rescues of people who have fallen ill on mountains. Examples include falls while walking and climbing as well as rescues of those suffering from hypothermia after becoming lost or benighted. They range from the tragic to the trivial (see Figure 2, on page 96). Each case is listed with details of the type of incident, time of the call out, demographic details of the victim, the weather conditions, the clothing and equipment of the victim, their experience and the immediate cause, location and outcome of the accident.

The implication of these data is that there are two levels of cause for each of these misfortunes. First is the immediate cause; for instance slipping on a wet path or collapse due to the onset of sudden illness. But before this were the conditions which made such an immediate cause more likely to occur: the environmental and other factors which can be used to predict 'an accident waiting to happen'. Thus the inadequacy of a walker's clothing is noted, or their lack of experience. Victims miscalculate risks by underestimating the weather; they flout risks by

Figure 2 Mountain accidents

No.	Type	Date and Call Out Time Involved	Age	Home Town	Weather and Ground Conditions	Clothing Equipment Footwear — Helmet	Known Experience	Cause of Accident	Location of Accident	Injury Detail	Involved Teams
68	Fell Walking	3rd 17 00 Woman	55	Lancaster	Light showers, wet underfoot	Boots doubtful, others OK	Not recorded	Slipped on wet ground	Redgill, Cautley Spout, Howgill Fells	Twisted ankle	Kendal
69	Fell Walking	3rd 17 10 Woman	NR	NR	Fine, cool, snow in gullies, cornices, low cloud	NR	NR	In difficulty descending to Red Tarn	Red Tarn, Striding Edge, Helvellyn area	Taken off unhurt	Patterdale
70	Fell walking	4th 18 00 Man	35	Leamington Spa	Low cloud, strong wind, rain, flooding	Good	Reported good	Had left car for over 24 hrs, gone fell walking	Melmerby Fell, Nr Pennines 673392	Found unhurt and 'apologetic' after 4 hours	Penrith SARDA
71	Fell Walking (Rambling Club)	6th 14 21 Man	45	Formby, Merseyside	Heavy rain, sleet/ tops snow covered	Good	Not known	Slipped on footpath	Calf Crag, Far Easedale, Grasmere	Tib fib fractured	Langdale Ambleside
72	Fell Walking 3 Men T Army Exercise	7th 08 35 3 Men	NR	c o Warcop Army Camp	Cloudy, very wet ground, drying out	All fully equipped in military clothing etc	Not known	3 men missing on military (fell walking) exercise	Carlingill, Howgill Fells, Tebay	1 man slightly injured, 2 OK	Kendal Helicopter Leconfield
73	Fell Walking	7th 14.10 Man	?6	Wirral	Very windy, cold	OK	NR	Slipped on steep ground, descending to escape from the strong winds	Grisedale Gill, Whinlatter	Broken ankle	Keswick
74.	Walking	9th 13 40 Man	65	Aldwych	NR	NR	NR	Collapsed on walk around the lake	Silver Point, Ullswater	Collapsed ill (not fatal)	Patterdale Ullswater (RBMS
75	Fell Walking	9th 16.45 Man	51	Lewes, East Sussex	Fine, dry, ground OK	Reasonable	Moderate	Tripped and fell on uneven rocks	Summit area of Coniston Old Man	Lower left tib fib fractured	Coniston Helicopter
76	Fell Walking (D of E Award Scheme)	10th 12 30 Woman	7	Formby, Merseyside	Fine, dry	Good, but very heavy pack	Very little	Collapsed on fell walk	Above Tilberthwaite Ghyll towards Birks Fell	Exhaustion, cold	Coniston

Reproduced from LDSMRA (C1992)

wearing inadequate shoes and clothing; they display ignorance of risks in their lack of experience. Significantly, the appeal is clearly to an epidemiological model of risk calculation, where the attribution of responsibility for specific accidents does not rely on any direct causal link between the actual risk which has apparently been miscalculated and the injury sustained. The 'original causes' (weather, clothing, skills) are merely correlates (in the sense that in taking such risks, one has a statistically greater chance of suffering an accident), yet the listing of them (irrespective of the actual injury sustained) implies a responsibility for the accident.

In one case, for instance, a man suffered spinal injuries and a fractured scapula in an accident that clearly did not directly result from his carelessness or miscalculation of any calculable risks. The man:

> On walk from car park to pose for a photograph, fell backwards over a boulder (LDSAMRA c1992: 43)

However, it is still noted that his clothing consisted of 'canvas shoes, town clothes' and that his experience was 'doubtful'. Boulders in car parks perhaps provide a yet to be calculated risk, but the victim here has already demonstrated his 'deservedness' of accidental injury through his inability (or unwillingness) to calculate the chances of mountain accidents. The actual causes seem not to be an issue. The important point, it is implied, is that those using mountains for leisure should calculate all possible risks. Failure to do so implies a certain culpability. Although such an accident might be constructed as being caused by bad luck in private accounts, in this public account it is implied as a statistically predictable outcome of a set of risk factors.

In the report itself, luck does have a part to play, but not it seems in the occurrence of the accident. Luck is mentioned only in the context of the extent of injury sustained. In one case (LDSAMRA c1992: 6), for instance, a man who was solo climbing fell 500ft and sustained a sprained neck and lacerations to scalp

Figure 3 Advice to walkers and climbers

LIVE A LITTLE LONGER

British mountains can be killers if proper care is not taken. The following notes cover the minimum precautions if you want to avoid getting hurt or lost, and so inconveniencing or endangering others as well as yourselves.

Clothing

This could be colourful, warm, windproof and waterproof. Wear boots with nails or moulded rubber soles, not shoes, plimsols, or gum-boots. Take a woollen cap and a spare jersey; it is always colder on the tops.

Food

In addition to the usual sandwiches, take chocolate, dates, mint cake or similar sweet things which restore energy quickly. If you don't need them yourself, someone else may.

Equipment

This must include map, compass, and at least one reliable watch in the party. A whistle, torch and spare batteries and bulbs (six blasts or flashes repeated at minute intervals signal an emergency), and, in winter conditions, an ice-axe and survival bag are essential. Climbers are all urged to wear helmets.

Company

Don't go alone, and make sure party leaders are experienced. Take special care of the youngest and weakest in dangerous places.

Emergencies

Don't press on if conditions are against you — turn back even if it upsets your plan. Learn first aid, and keep injured or exhausted people warm until help reaches you. Get a message to the Police for help as soon as possible, and report changes of route or time-table to them if someone is expecting you. The Police will do the rest.

Dangers Which Can Always Be Avoided

and should be until you know how to cope with them.

Precipices
  Slopes of ice,
    or steep snow,
      or very steep grass (especially frozen),
        or unstable boulders.

Gullies and stream beds.
  Streams in spate.
    Snow cornices on ridges or gully tops.
      Over-ambition.
        Plain damned carelessness.

Dangers Which May Surprise You

and sould be guarded against:

Weather changes - mist, gale, rain or snow.

Get forecasts, and watch the sky in all quarters.

Ice on paths

Carry an ice-axe and crampons
know how to use them.

Excessive cold or heat.

Dress sensibly, and take a spare jersey.

Incipient exhaustion.

Know the signs; rest and keep warm.

Accident or illness.

Don't panic. If you send for help, make sure that the rescuers know exactly where to come.

Flight of time.

Learn your own pace. Plan your walk.
Allow double time in winter conditions.

It is no disgrace to turn back if you are not certain. A party must be governed by the capabilities of the weakest member.

Reproduced from LDSMRA (C1992)

and nose. The outcome was described as 'very lucky' in parenthesis. To fall so far with minor injuries is perhaps 'very lucky', but there is no suggestion that to fall at all (be it over a car park boulder or into a ravine) is unlucky.

The message that luck has little part to play is reiterated at the end of this report, in the public information intended for those who use the mountains and surrounding countryside for recreation. This information (see Figure 3 on page 98) explicitly holds the victim responsible: 'British mountains can be killers' it notes, 'if proper care is not taken' (LDSAMRA c1992:66). Proper care is a daunting prospect involving predicting not only the weather and the physical environment but also protecting against what the recommendations call 'plain damned carelessness'. Accidents, even in such high risk recreations such as rock climbing or long distance hiking, should not happen. They only do so if the public fail to take due care to calculate known or knowable risks.

There are suggestions here that the rationality outlined in the last chapter as being a precondition for accidents to emerge may now have somewhat different contours. A belief that some events are 'just' accidents here appears decidedly irrational. The rationality that emerged from the late seventeenth century involved deterministic notions of direct cause and effect: a wound festers, in Evans-Pritchard's example, because it gets dirty. The toe is cut because the boy was clumsy enough to bump into a tree stump. All else is mere coincidence and there is nothing to be gained in trying to account for the tree stump being in the same place at the same time as the toe. Accidents were what was left over when such explanations reached their limit, the random misfortunes distributed by laws of probability. These statistics on mountain accidents imply, though, that accidents happen not when deterministic laws are inapplicable but when individuals fail to demonstrate adherence to other laws; those of statistical probability. Weather conditions, inadequate clothing and lack of experience constitute a field of knowable and calculable risks. Accidents happen not when combinations of these factors come together in an unpredictable way, but when they are miscalculated or ignored. In 1931 Evans-Pritchard's young friend was merely unlucky. If his

misfortune had disabled him on a modern English mountain, he might expect facts about his experience, clothing and footwear to be interrogated and listed. Although not held officially culpable for tripping on a tree stump, the statistics to which his accident contributed would generate a map of responsibility; a field of risks which he should have adequately negotiated.

There are, then, signs that the belief that some events are 'just accidents' has a more ambivalent status in contemporary Britain. As the review of medical classifications of accidents in Chapter Two suggested, the epidemiology of accidents has become increasingly more detailed. By the middle of the twentieth century there was a growth of production of knowledge about accidents and how their occurrence is patterned, which produced not a disparate group of random misfortunes but a set of events correlated with social, environmental and psychological risk factors. Far from demonstrating an unproblematically 'modern' outlook, a belief in coincidence or luck begins to demonstrate an anachronistic 'lay' view of accidents. Levy-Bruhls's modern mentality attributed a certain category of events (those due to the random play of chance in an otherwise determined universe) to the accidental. Today it appears, at first sight, that only the primitive persists in a belief in the random accident. It as if in the late twentieth century the remainder of the universe has been made calculable, if not precisely known. Through epidemiological mapping even chance events have been made predictable, and the accident no longer has a legitimate place. There are here some suggestions that contemporary discourses of risk and its management have produced a rather different accident as a type of event and a rather different status for the accidental as causal explanation. In short, beliefs in accidental cause have shifted from being definitive of a modern cosmology to being anachronistic.

The example of the recording of mountain accidents furnishes some clues to an understanding of the role of accidents in contemporary discourses about misfortune. It seems that accidents are no longer merely left-overs of our classification system but have been (or are being) transformed into the outcomes of predictable (at least in theory) risk factors. Rationality, as it has been

characterised so far, is no longer an adequate explanatory system in which to situate the accident, for the accident no longer results from the inevitable boundaries of that system. First, then, it may be pertinent to revisit some of the debates about rationality noted in the previous chapter, to explore whether the rationality that was seen to characterise cosmology between the late seventeenth and early twentieth centuries has been replaced by some other discourse about what constitutes reasonable behaviour and belief.

Second, the notion of risk appears to be a key one. To describe a 'risk' suggests an individualised statistical prediction, in which the population statistics which emerged in the West from the late seventeenth century have been translated into individual 'chances' of a misfortune occurring. It has already been noted that by the middle of the twentieth century rationality had been contested as both a normative ideal and as an adequate description of contemporary explanatory systems. It may be useful to examine more closely the fracturing of this consensus around rationality to attempt a characterisation of late twentieth century explanatory models, and the space occupied in them by accidents.

CHARACTERISING MODERNITY AS 'RATIONAL'

Foucault is one writer who has rejected any easy equation of modernity with 'rationality', if rationality is taken to be a description of the dominant discourse following the Renaissance developments in science. Examining the domains of natural science, political economy and grammar, he claimed:

> This new configuration may, I suppose, be called 'rationalism'; one might say, if one's mind was filled with ready made concepts, that the seventeenth century marks the disappearance of the old

> superstitious or magical beliefs and the entry of nature, at long last, into the scientific order (Foucault 1989:54)

Even the 'slightly more perceptive' (Foucault 1989:56) who typify this rationalism as containing 'contrary forces' have, argued Foucault, an inadequate analysis. A more convincing characterisation of the modern age (or the Classical age in Foucault's account, from the mid seventeenth century to the end of the eighteenth) is that of an *episteme* of knowledge based on order and on difference, as distinct from the Renaissance, when knowledge was configured around essential similarities. To describe such a knowledge as 'rational', he argued, implies that it emerged from the failures of pre-Classical thought. Such a description assumes that rationality was essentially predicated on the attempt to make nature calculable with *mathesis*, the 'universal science of measurement and order' (ibid: 56). Thus in the conventional formulation the Classical project is an empirical and quantifying one, concerned to reduce all of nature to quantifiable relations, and the 'more perceptive' formulation merely adds that some aspects of life (perhaps the 'human' qualities) are irreducible. This formulation is, says Foucault, still inadequate. Instead he describes the fundamental characteristic of knowledge in the Classical period as being about the link with mathesis, which was primarily one of order, and only secondarily of measurement: calculability is not the central issue (Foucault 1989:57). The characteristic tool of Classical knowledge was *analysis*, which replaces the interpretation of the Renaissance period. Analysis is of *signs*, which can be ordered (potentially exhaustively) within a table (the archetypal form of Classical knowledge). A table quantifies signs, but more significantly, in Foucault's account, it demonstrates the relationships between them (Foucault 1989:74). Like Hacking (1978), Foucault describes the sign as having changed its nature after the seventeenth century, having lost their Renaissance connection with the signified; they cease to be 'a form of the world, bound to what [they] mark by solid and secret bonds of resemblance or affinity' (Foucault 1989:58). The sign is thus divorced from the 'teeming world...and lodged henceforth within the confines of representation...in that narrow space in which they interact with themselves in a perpetual state of decomposition and

recomposition' (Foucault 1989:67). For Foucault, this Classical *episteme* was supplanted at the end of the eighteenth century by a new knowledge, now based on analogies and organic structures (Foucault 1989:227), in which the sign signified invisible structures, or 'great hidden forces developed on the basis of their primitive and inaccessible nucleus, origin, causality and history' (ibid:251). The 'problem of Man' occurs within this new age; and the human sciences are one facet of this. The Classical project was a comprehensive one, with a mathesis as a unifying foundation which could potentially include all branches of knowledge. The new *episteme*, however, was fractured at its beginning: there was no single or comprehensive rationality, only what Hacking (1987) has referred to as 'styles of rationality'.

In terms of describing the place of the accident, Foucault's criticism of a characterisation of modernity (his Classical period) as 'rational' is pertinent. The tables of the Registrar General reviewed in Chapter Two are perhaps an example of the kind of analysis he argues is characteristic of the episteme. In them, the accident is not merely quantified, but placed in relation to other 'signs' (of infectious disease, of suicide) and then subdivided into internal classes (railway accidents, home accidents, road accidents) which are tabulated against signs of social states (age, gender, occupation). Foucault's argument warns of the dangers of assuming that contemporary analysis (the ever more sophisticated cross-tabulations of the risk factors of accidents, for instance) are a progression from this; merely a more refined version. Instead, we might find a radical discontinuity, with accidents as the product of some quite different discourse.

However, despite Foucault's critique, it seems useful to retain the notion of 'rationality' to describe the emergent consensus of the late seventeenth century, which lasted, in certain fields of knowledge at least, until the middle of the twentieth century. A precise periodisation may not be possible, but there are some grounds for looking for a shift in explanatory discourses in the middle of the twentieth century. When Sharpe was translating the medieval coroners' rolls in 1913 and Evans-Pritchard describing the 'irrational' Azande in 1937, they could

still appeal to an ideological consensus that accidents were a given, indisputable feature of a 'rational' universe.

How, then, are we to characterise the late twentieth century in order to differentiate it from this period of 'rational' consensus? Giddens (1991) uses the term 'high modernity'. High modernity is characterised by 'a widespread scepticism about providential reason, coupled with the recognition that science and technology are double-edged' (Giddens 1991:27). Giddens claims that such scepticism is not merely the province of intellectuals and that an 'existential anxiety' is typical of wider society, whose members have constantly to negotiate risk and uncertain futures. In 1919, Weber could characterise the rationality of modernity as one in which all things were in principle calculable: as individuals we may not know how a particular technology (the motor car, the pharmacological action of medicine) works, but we assume that someone (an expert) does know, and that 'one can, in principle, master all things by calculation' (Weber 1948, first published 1919).

It is the status of this 'expert' who does know that has shifted in high modernity, whose infallibility is no longer trusted. Science and technology are, it is argued, no longer the province of accepted experts with automatic credibility. Freudenburg (1993) has coined the term 'recreancy' to describe this loss of faith in individuals and institutions in whom (it is implied) we would have trusted in former times. 'Recreancy' implies a failure to fulfil either the social obligations expected or to warrant trust. Freudenburg uses the term to denote any behaviour which falls short of these obligations, whether intentional or not. This is significant for this discussion, given that the modern 'accident' (in the nosological accounts of the nineteenth century and anthropological one of the early twentieth century) was constructed in terms of motivation. In this light, the concept of 'recreancy' recalls Figlio's (1985) argument that an accident could only happen when negligence (which was essentially unmotivated) entered employer-employee relations in contract law. However, 'recreancy' is perhaps rather more diffuse:

any expert individual or organisation can fail in their social obligations, whether a contractual relationship existed or not.

In looking at how people perceive risk, Freudenburg claims that the strength of belief in 'recreancy' (for instance of government departments) is more significant than the traditional factors of risk perception analysis, such as technical assessments of the actual risk posed, or the socio-demographic characteristics of the risk perceiver. An analysis of beliefs in recreancy, he argues, may be more productive than sterile debates about whether perceptions of risk are rational or not. In empirical studies they are a better predictor of attitudes to specific risks than gender, political ideology or measures of self-interest. The key to understanding whether risks (in his example, those of the management of nuclear waste) are seen as reasonable or not is an analysis of views in the fallibility of experts and public bodies. Freudenburg notes that the value of this approach is likely to be greatest in domains in which an 'accident' is likely to happen. The definition he chooses of an accident is significant for this discussion: 'an occasion in which a miscalculation leads to the breakdown of customary order' (Molotch 1970, quoted by Freudenburg 1993). Accidents are here explicitly attributed not to luck or fate but, like the mountain accidents in the example above, to miscalculation. Neither are they the inevitable misfortunes of the 1930s, which any rational actor should expect as, at times, inevitable.

RISKS

Perceptions of risks

If accidents are produced and understood not through the interplay of deterministic and statistical laws, but through the calculation (or miscalculation) of risks,

perhaps the crucial question is that of understanding what constitutes a 'risk' in the late twentieth century. Like rationality, the term 'risk' has been utilised in a wide range of discourses in which it serves rather different purposes. Douglas (1988) has reviewed some of these in her study of Risk acceptability according to the social sciences, from seventeenth and eighteenth century theorising about the 'risks' of gambling, through nineteenth century 'utility theory' to the sub-discipline of 'risk assessment', which she dates as beginning in the middle of the twentieth century, when the relative benefits and dangers of an emerging nuclear energy industry were debated in the public arena. She argued that, although risk perception has received considerable attention from psychologists, economists and organisational theorists, there has been little study of the cultural influences on risk perception. How risks are selected as significant, and how people come to take certain risks, and not others, in modern society has been a problem of psychology rather than one of cultural theory, with a consequent focus on risk perceptions as pathological or irrational. Freudenburg (1993) makes a similar point; that sociological attention to risk has largely been directed at the characteristics of individual risk perceivers.

However, there has been some more recent work on how risk perceptions are situated in particular cultural forms. Some of this work takes an earlier study by Douglas (1973) as a starting point. Here, Douglas suggested an anthropological approach to 'risk assessment', which would focus on how the organisation of society can structure the perceptions of individuals within it of where dangers lie. Her analysis rested on the relative strengths of two organising principles, called 'grid' and 'group'. Grid referred to the 'scope and coherent articulation of a system' (Douglas 1973:82). Thus a strong grid indicated a system in which there was a high degree of shared agreement about classification and meaning. Group referred to the amount of control an individual could exercise within the system: a strong group was one in which there was a high degree of control over action (Douglas 1973:84). The articulation of grid and group within a society (or sub-culture) helped to determine how such misfortunes as accidents were perceived by that cultural system. Where both grid and group are strong, that is, a cultural

system which was both strongly externally bounded and with is a high degree of consensus about internal norms, then:

> Disease and accident are either attributed to moral failures or invested with nobility in a general metaphysical scheme which embraces suffering as part of the order of being (Douglas 1973:136)

In contrast, where there are strong external boundaries but weak internal classification, misfortunes such as accidents may, she argues, be attributed to witchcraft. Thus the degree of individual freedom to act and the strength of consensus about cultural norms structure the attribution of misfortunes, and how they are classified.

This analysis has been used by Bellaby (1990) to examine risk perceptions within groups in contemporary Western society. He explored why different people may have radically different conceptions of the risks that they face in a study of different groups of workers in a pottery factory. Here, perception of the risks of the various work settings within the factory were seen in terms of the relationships these settings had to the factory as a whole. Those workers who worked in the extremes of physical conditions (such as the kiln workers, who worked in extremes of heat, or those in the cold and wet of the slip house) considered themselves 'hardened' to risks. Hardship strengthened immunity to risk. Others in more marginal work places (those decorating the pots) on the other hand, considered themselves vulnerable to physical risks. This was not, claimed Bellaby, merely a case of irrational attitudes to the physical environment. Instead, Douglas' (1973) analysis of 'grid' and 'group' as organising principles offered a way of conceptualising the stances of these workers. In Bellaby's account, the kiln and sliphouse workers had strong 'group' boundaries (they worked for instance, in an area to which other groups of workers were not admitted) but had weak 'grid' boundaries: the workers were not internally differentiated. Cultural perceptions of risk could thus be seen as being patterned by the relative strengths of grid and group, as shown in Figure 4.

Figure 4 Bellaby's analysis of pottery workers' risk perceptions

	GROUP	
	HIERARCHICAL	EGALITARIAN
	Complacent	Risk immune
	(Family directors,	(Slip house and kiln
G	shop stewards)	workers)
R		
I	DIFFERENCE	SIMILARITY
D		
	Fragmented	Individualist
	vulnerable	Risk taking
	(process workers)	(middle and
		junior managers)

(Reproduced from Bellaby 1990)

Another example of what could be called a 'cultural' analysis of risk perceptions is Carter's (1994) study of risk perceptions within a nuclear power station. Carter examined gender as one cultural division that structures risk perceptions, and accounted for how these beliefs were held within discourses of power and of the calculability of risks. The relations of power within the station were essentially gendered, and it emerged that discourses of risk were too. Nuclear radiation, for instance, was constructed as a calculable risk: knowable, manageable and scientific. Safety messages and working practices for workers at the power station emphasised the 'safe' levels of radiation in the plant, which could be measured and monitored. These were compared with the threats of unknown radiation from the 'natural' environment. The home was referred to as the most dangerous place, as it was unregulated, in contrast to the ordered and managed environment of the plant. Safety training pointed to the dangers of the home, compared with the

managed safety of the power plant. These discourses of managed scientific risk compared with the dangers of unregulated 'natural' or domestic risks were constructed, argued Carter, within gendered dichotomies: male, science and ordered opposed to female, nature and unregulated. Danger, he argued, did not so much reside in the natural or female spheres as arise from the possibilities of transgression: from flows of radiation from one sphere to the other. The relations of gendered power were intricately tied to the construction of 'risks' within the work place, as evidenced in the discomfort of some workers with female managers: those who had transgressed expected gender roles.

The work of Bellaby and Carter, and many others who have explored the cultural construction of risk in other domains (see, for instance, Davison et al 1991 on heart disease risks; Warwick et al 1988 on young people's beliefs about AIDS; Plant and Plant 1993 on adolescent's risk taking behaviour; Roberts et al 1993 on accidents), suggests that analysing individual risk beliefs as deriving from cultural rather than psychological factors has been, in recent years, a rich field of research. In this research, perceptions of risk are taken as rational, when situated in their cultural context, rather than as irrational, or pathological. Risk-taking behaviour is presented as reasonable behaviour, in terms of the internal logic of a cultural system. Risks are therefore not purely external or objective dangers, but are produced, negotiated and manipulated within social interaction. This body of work (largely from the 1980s and 1990s) has constructed risk in a particular way, in terms of the motivations people (as members of cultural groups, rather than as psychologized individuals) have for engaging in 'risky' activity.

A social theory of risk: some assumptions

A 'social' theory of risk taking produces, perhaps, a set of assumptions about what risks are and how we manage them. The first set of assumptions problematise any direct relationship between knowledge and behaviour. Knowledge about the

distribution of risks and how to manage them does not imply that action will be taken to reduce them. First, action taken to reduce one risk may increase vulnerability to another. Taking a risk (and so risking an accident) may be the result of a rational calculation of the possible benefits of a particular action - or indeed the symbolic meaning of the act itself. Luker (1975), for example, in her study of why women may risk an unwanted pregnancy (often described as an 'accident'), analysed some of the 'costs' that may be involved in not taking that risk. Although such behaviour as having unprotected heterosexual penetrative sex when not trying to get pregnant may be seen as either ignorant or irrational, there are, she argued, some very rational reasons why that risk may be taken. Not 'being careful' indicates trust, which may be a highly prized commodity in relationships. Taking precautions will mean having to address explicitly the fact of having sex, which may be difficult to do. As Luker noted, the chance of getting pregnant if having unprotected heterosexual sex for one year may be 80%, but the *risk* for each woman on each occasion is either one or nought.

Second, there are situations in which deliberately taking risks is socially legitimated within particular sub-cultures: children's 'dares' or parachute jumping for charity. In this light, specific risks can also take on different meanings at different points in the life cycle. Backett (1992), for instance, noted how respondents in her study of middle class health beliefs often described certain behaviours as being 'healthy' for young adults but reckless for those with family responsibilities. Men in particular cited such activities as rugby or drinking excessively as a healthy part of early adulthood, but as being inappropriate for their current situation as parents. Taking risks is clearly at times not only a rational but also a prudent option. Backett's respondents saw dangers in the excessive avoidance of risk, as this could lead to fanaticism about health and an inability to keep life in balance.

Adolescence has also been described as a period in which taking risks is (at least to an extent) socially legitimated in modern society. Plant and Plant (1993) argued that some of the psychological features of adolescence as it is constructed in

Western society encourage risk taking. One feature of adolescence is the so called myth of 'invulnerability' whereby 'young people, often at their physical peaks, typically view themselves as invulnerable' (Plant and Plant 1993:113). Using illegal drugs, experimenting with sex and riding motorbikes are the kinds of risk-taking behaviours viewed here as 'normal' in that they are engaged in by a large proportion of adolescents. Taking some risks is seen, then, as a legitimate stage of adolescence, pathological only when taken to excess. Defining 'excess' is of course problematic. Accidents such as a motorbike crash or a drug overdose are one sign, perhaps, that excess has been reached. Even where a certain amount of risk taking is legitimated, the accident serves to mark the boundary of reasonable risk: the accident is the ultimate indicator that a risk 'taken' has been miscalculated.

Third, there are situations in which the intrinsic pleasure of a recognisably accident prone activity outweighs the negative possibilities of the risk. Thus, the explanation of why Air Force pilots volunteer for such a high risk profession lies in 'the amount of pure joy the flier derives from flying... the extent to which the flier's defenses have been challenged by circumstance' (Jones 1986). For such activities, like dangerous sports, the risk may contribute directly to its intrinsic pleasure despite controversy about the level of risk which is socially acceptable: 'You put handrails up Everest, you'll get an ice pick in your back' (Engel 1994). As Kickbusch (1988) has noted, taking risks may be a essential to building up a particular social identity.

The second set of assumptions created by a social theory of risk relate to the field of potential risks, which is infinite. However sophisticated knowledge about risk factors and the correlations between them becomes, it is not possible to map all of the risks we face, or even to develop agreed criteria upon which recognised risks can be assessed. We cannot know whether we face an ever increasing range of risks or a diminishing one, as risk assessment is a political enterprise, with risks judged 'acceptable' or not in terms of the values and beliefs by which they are assessed. If there can be no consensus about the prioritisation of a specific set of

risks, there is clearly scope for accidents to happen which are held to be miscalculations by one group, but reasonable risks by others. In such cultural accounts, then, the apparently non-utilitarian action is not the pathological belief examined by psychologists in order to ascertain barriers to rational choice: it is rather seen as one possible rational choice; even if a problematic one in terms of an apparently risk aware culture.

The emergence of a sociology of risk

This recent body of work seems, then, to address the gap Douglas identified in the social sciences for a cultural analysis of risk perceptions (Douglas 1986). However, Douglas had suggested that 'as the neglect of culture is so systematic', addressing questions about the cultural determinants of individual risk perceptions would need 'nothing less than a large upheaval in the social sciences' (Douglas 1986:1).

The 'upheaval' Douglas considered as a prerequisite for a cultural analysis of risk seems to have happened, and may go some way towards understanding the new location of accidents in our classifications of misfortune, as it is perhaps a more general upheaval than one just of the social sciences. In a later work, Douglas suggests that the word 'risk' itself has come to signify something new; specifically that 'the word "risk" has come to serve the forensic needs of the new global culture' (Douglas 1992:22). By this she means that it organises many of our debates about blame and responsibility. Risk is no longer a neutral term for the calculation of probability, it signifies 'danger' specifically. There are, Douglas argues, a fixed number of possible causes we can attribute to misfortune. We moderns, she argues, no longer look to ancestors, or witches, but see danger and the analysis of misfortune in terms of vulnerability to risk. The delineation of precisely what 'risk' does now signify has been the subject of considerable

sociological enquiry in recent years. As risks have been identified as key to the production of contemporary accidents, it is perhaps worth examining some of these arguments.

Indeed risk has become a key issue for discussing not only accidents but living in general in the late twentieth century. Beck (1992) has suggested that it is the distribution of risks through which modern industrialised society is divided, rather than by access to the production of wealth. Giddens goes further in suggesting the day to day implications of this orientation:

> To live in the universe of high modernity is to live in an environment of chance and risk... Fate and destiny have no part to play in such a system' (Giddens 1991:109)

'Fate' and 'destiny' have had, though, no legitimate part to play for the last two hundred years. What is perhaps different about 'high modernity' is that, as Hacking (1987) puts it, 'chance has been tamed'. Accidents can no longer 'just happen', but have become predictable in terms of probability, chance and risk.

If we can take Giddens' statement as a workable summary of aspects of contemporary discourse, or at least the cluster of beliefs that relate to causality and legitimate ways of imputing it, the accident, as it emerges from rational thought, has no place. In a world which is made knowable through probabilistic reasoning where deterministic law does not suffice, chance itself is calculable. Several writers have argued that the 'accident', as it has been understood in rational modern cosmologies, has (or will) disappear in high modernity. Ewald (1991), for instance, notes that accidents are essentially individual misfortunes, unique happenings that concern only the victim and the protagonist, if any. The rise of insurance, and with it the notion of risk, dissolves the individual subject of the accident, for we all share risks. They belong to the population, and our individual share of that risk is merely an average.

Castel (1991) further argues that a discourse of risks forms a new mode of surveillance, in which the entire population is subject to continual assessment for risk factors. Preventative strategies, he argues, become possible when there are the techniques to calculate the statistical correlations of risk factors. Again, the individual subject is dissolved in this new mode of control, for in preventative strategies the individual relationship (for instance between doctor and patient) becomes secondary to the construction of the patient as a constellation of risks. The multiplication of possibilities for intervention is potentially infinite, for we can never know all risk factors. For Castel, this new mode of surveillance is 'a grandiose technocratic rationalizing dream of absolute control of the accidental' (Castel 1991:289). The myth is one in which all the risk (for psychiatric disorder, or for having an accident) can be precisely enough calculated for their prevention.

The concept of a 'risk society' serves to characterise not only a contemporary orientation to chance and misfortune, but also a contemporary style of power. Following Foucault's delineation of the concept of 'disciplinary power' (Foucault 1977), in which the individual is constituted as an object of knowledge, to be reformed or 'normalised' through disciplinary means, O'Malley (1992,1993) has characterised risk as a new strategy, in which the individual is of little concern. Risk techniques operate not by normalising the individual through altering their behaviour, but by statistical manipulation of the facts about aggregated individuals. It is a technique of accommodation, through increasingly sophisticated knowledge of the risks of sub groups of the population: 'whereas disciplines evolved in the early part of the modern era, as defensive strategies for managing the 'dangerous classes' by coercion, exclusion and correction, the risk based tactics and categories are more incorporative and meliorating' (O'Malley 1993:6). One corollary of the development of risk-based techniques, argues O'Malley, is the reduction in opportunities for resistance. The statistical risk categories produced to describe populations do not correspond to the ways in which individuals see themselves, and they are consequently not obvious centres of group mobilisation. O'Malley's example of the development of risk technologies is that of crime prevention, which he argues has become more individualised: it is individual citizens who are

encouraged to reduce risks through a range of preventative strategies such as adequately securing cars and houses or not walking alone at night. Such an approach is prudential and situational, seeing crime primarily as an outcome of individual failure to prevent it rather than of criminal biographies. There are clearly some parallels here to the management of accident risks, which will be examined in the next chapter. Here, the importance of these arguments about risk and its management as a strategy of power are significant because they produce the accident as a paradigmatic outcome of miscalculation. The logical outcome of risk calculations, as Castel suggests, is that they produce a preventable accident.

Of course, such a possibility is a myth in that techniques of calculation based on statistical probabilities can never predict specific individual events. The myth is a powerful one, though, which makes possible the statistics on mountain accidents which fix the accident in a web of risk factors, rather than as an individual misfortune. Accidents no longer demonstrate the proper limits of rational explanatory systems, but rather individual failure. Contained in this myth of preventability is a paradox, as Prior (1993) has pointed out. The mapping of risk factors for accidents can only produce a rate (for instance for road traffic accidents) which describes a population. It cannot be legitimately used to describe an individual's risk of having an accident; only the risk of particular sub-groups of that population (women, children, oil rig workers) having an accident.

In practice, though, accidents happen not to groups or to populations but to individuals, who must account for their personal misfortune. A tension thus emerges, between the myth of preventability and the occurrence of what ought to have been prevented. The accident as an event still occupies an essential place within the taxonomy of misfortunes, but in the 'risk society' of high modernity it has radically shifted. A new dimension has emerged as a key factor in the analysis of misfortune: that of calculability. As explanation, the accidental is redundant, and the gap left for explaining personal misfortune has grown.

Periodisation

It is suggested, then, that this implies a periodisation of European thought involving three dominant discourses, which could perhaps be crudely summarised as 'fate', 'determinism' and 'risk'.

In the first, before the second half of the seventeenth century, events in a life occur as part of a personal destiny. The accident, a chance happening that was not willed, has no place, as all events fit into a pattern.

By the end of the seventeenth century fate and destiny are replaced by a discourse of determinism, and accidents emerge as the leftovers of that explanatory system. They are an essential category of misfortune, and a belief in accidents becomes definitional of modernity by the 1930s, when 'rationality' could unproblematically describe Western cosmologies.

This consensus around rationality was fractured in the second half of the twentieth century, heralding what some have characterised as a 'post-modern' age in which no hegemony can be assumed about science, reason or rationality. One aspect of this late twentieth century phase is a discourse of risk and its management. Misfortunes such as accidents are calculable and if not avoidable, then potentially so. At what point did this shift take place? It has been suggested that a key feature of modern discourses of risk is the break between deterministic causes and their effects, which has been replaced by a relation between statistical probabilities. Between 1800 and 1930, claims Hacking (1987) 'chance is tamed': determinism is eroded and probability emerges as the dominant discourse. Indeed in his view 'the taming of chance and the erosion of determinism constitute one of the most revolutionary changes in the history of the human mind' (Hacking 1987: 54). Determinism, or the view that 'the world was ... governed by stern necessity and universal laws' (1987:45) was eroded as chance became manageable. Hacking describes this as a four stage process.

First, from 1820 - 1840 there was an exponential increase in availability of printed numbers. From these it became possible to perceive regularities in facts about human behaviour. Between 1835 and 1875 there was a growing faith in the regularity of numbers. Adolphe Quetelet, the Belgian astronomer and statistician who led the First International Statistical Congress, proposed the idea of *l'homme moyen*, the average man. Social and even moral characteristics, he proposed, were distributed like any other natural phenomena, and could be studied using Gaussian laws of error. From 1875 onwards was the third phase, in which statistical laws became autonomous: correlations did not have to be reduced to underlying causes. Finally, between 1892 and 1930, determinism was finally laid to rest, and 'it became virtually certain that at bottom our world is run at best by laws of chance' (Hacking 1987:45).

Hacking provides a convincing account that chance has been 'tamed', and it is possible that the growing importance of probabilistic reasoning and a corresponding diminishing space for deterministic reasoning at the beginning of the twentieth century opened the space for a discourse of the accident, even if it was at first restricted to those domains in which it was absent. However, Hacking's account also raises perhaps the question of why this happened by the beginning of the twentieth century. Daston (1987), moving away from the analysis of pure discourse, suggests some environmental and structural reasons for this shift, in her examination of changing nature of insurance in the light of mathematical laws of chance. Although the rise of insurance started in the eighteenth century, these early attempts were, she argues 'less prudential than reckless' (Daston 1987: 235). Today gambling is perceived as the taking of unnecessary risks for a possible gain, and insurance as the attempt to avoid unnecessary risk, but, argues Daston, there was little to distinguish them until relatively recently in European history. Maritime insurance, for instance, was based solely on the experience of the underwriter. Their assessment of risks relied on their knowledge of issues such as the skill of the captain, the likely weather conditions and the condition of the ship and upon the prevailing market forces of competing underwriters rather than any statistical analysis of the risks involved in a voyage. There was no distinction

between gambling and insurance: in fact life assurance was illegal in much of Europe until the nineteenth century. Paying for insurance was a gamble: in the eighteenth century one could buy insurance against cuckoldry, lying or even losing in the London lottery. Such schemes were not, argues Daston, based on the calculation of probable risks but on experience and the market. Those offering fire insurance did not, she notes, even collect statistics on fires.

The increase in understanding of statistics was one precondition for the development of a prudential system of insurance. Only when mortality tables were, for instance, based on observed death rates rather than on assumed equi-probable chances of dying, could insurance be anything other than a gamble[1]. However, she also notes that external factors made possible this new approach:

> [maritime insurance] was not just astatistical it was antistatistical. Given the highly volatile conditions of sea traffic and health in centuries notorious for warfare, pirates, plagues, and other unpredictable misfortunes, I am not persuaded that this was an unreasonable approach (Daston 1987:240)

This comment suggests that a 'probabilistic revolution' was not possible before the end of the nineteenth century because the world was simply too unpredictable: accident and misfortune did occur randomly, so there could be no development of laws which relied on patterns. It is not possible to predict the unpredictable. This is not wholly convincing, as it merely begs the question of why the risks of the seventeenth or eighteenth century (plagues or warfare) were seen as random manifestations of God or of the precariousness of the world, whereas the risks of today (heart attacks, industrial pollution) are conceptualised as 'knowable'. It

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[1] The public reaction to the massive financial losses incurred by the Lloyds 'Names' on the insurance market in the late 1980s and early 1990s indicates perhaps the contemporary notion that insurance should not be a gamble: one agency chairperson was quoted as saying 'Reinsurance is high risk, but it isn't meant to be a casino' (Spingett 1994).

does, however, offer the possibility of grounding the analysis of discourse in historical conditions. Social mores provide an additional incentive to the utilisation of probabilistic theory. By the nineteenth century there was a growing salaried middle class, who had no independent means and the purchase of a sound policy would insure their families against destitution in the event of their death. A heightened sense of familial responsibility, of economic responsibility and an aversion to risk, meant that these were the ideal buyers of insurance that was based not on arbitrary risk but on prudential foresight.

Daston's suggestion that the advent of risk calculation was only possible after the environment became less unpredictable raises the question of how certain risks, and not others, are selected as knowable or calculable. It is difficult to accept her implication that the world actually contains fewer risks now. As Douglas and Wildavsky note:

> For anyone disposed to worry about the unknown, science has actually expanded the universe about which we can speak with confidence. In one direction, parsecs and megaparsecs enable people to consider huge magnitudes otherwise too difficult to manage, and in the other direction technological advance allows discussion of minute quantities, measured in parts per million...The same ability to detect causes and connections or parts per trillion can leave more unexplained than was left by cruder measuring instruments. (Douglas and Wildavsky 1983:49)

Beck's work also suggests a universe of increasing rather than decreasing risk and danger. The difference now, he suggests, is that the risks we face are internal: they are produced by the very scientific advances which were to control dangers. The risks of maritime trade in the seventeenth century were external: from nature, God and enemies. Science today, claims Beck, is reflexive (1986:155-163), in that it now confronts its own products: science both produces problems (such as pollution) but also has the potential for solutions. Science no longer operates on

nature and its dangers as 'givens' but as creations of itself. In the 'risk society' science no longer has privileged claims to rationality and truth: scientific scepticism is directed internally as well, criticising its own foundations. Thus critiques of science come not just from outside (from marginal groups) but from within the established disciplines. With an exponential growth in scientific findings science has lost its monopoly as a producer of knowledge, for this over-production carries with it a demystification and uncertainty (Beck 1986:157). One outcome of this is that:

> There occurs, so to speak, an over-production of risks, which sometimes relativize, sometimes supplement and sometimes outdo each other. One hazardous product might be defended by dramatizing the risks of the others (for example, the dramatization of climatic consequences 'minimizes' the risk of nuclear energy). (Beck 1986:31)

Beck describes not a society comfortable with a more predictable environment, but a society beset by risks and their management.

It is not perhaps possible to judge whether there are fewer risks in the late twentieth century or more. Rather, there has been a radical shift in the ways in which dangers are conceptualised. Risk has become a key concept around which our concerns are organised. As we can calculate with finer and finer precision the probability of a certain event given particular sets of circumstances, we can perceive many misfortunes as the outcomes of the inadequate handling of the risks for those events. Accidents have an apparent dual role in such calculations. They are first the archetypal outcome of a risk miscalculation. An accident happens when risks have been inadequately assessed, or incompetently managed. At the same time though, they are in themselves the object of much risk assessment.

The experience of accidents in a risk society

It has been argued, then, that risk is a key concept for understanding cosmologies of misfortune in contemporary culture, and that the risk society has produced a myth that accidents should not happen. However, the calculation of risk factors cannot provide a prediction of individual misfortunes: it can only recreate them as belonging to a population rate. Those who suffer an accident still have to make sense of the event in a meaningful way, including an account of why it happened to them specifically. It has been suggested that contemporary life is characterised both by our decreasing ability to cope with uncertainty and risk (see for instance Fox 1980) and by our willingness to lay blame on others for accidents: if they result from the miscalculation or mismanagement of risk, we should be able to identify who was responsible for the miscalculation or mismanagement. Douglas and Wildavsky noted that we demand:

> commissions of enquiry into every accident and post-mortems for every death...we have enlarged the scope for making someone pay for each misfortune we undergo (Douglas and Wildavsky 1983:33)

One aspect of this need to attribute responsibility is the rise of medical litigation in the United States: insurance costs for medical practitioners have sharply risen as they are held legally responsible for an increasing range of outcomes of medical practice. In parts of North California, for instance, doctors can be held responsible for manslaughter if their patient dies after a housecall is refused (Douglas and Wildavsky 1983:34)[2]. Douglas and Wildavsky suggested that there is a curious parallel here between primitive mentalities, which hold all deaths to have a cause, and modern ones. If belief in a natural death was a modern development, they

[2] Although there have been claims that Britain is following this American trend of increasing litigiousness, there has been some evidence that accident victims in Britain have traditionally been rather more reluctant to hold others legally responsible for injuries sustained 'accidentally' (see Genn and Burman 1977; Blaxter 1976:192).

suggested, then we are in danger of losing it: '[primitives] demand an autopsy for every death; the day that we do that, the essential difference between our mentality and theirs will be abolished' (Douglas and Wildavsky 1983: 32).

However, there are problems with merely equating late twentieth century beliefs with those that were characterised as 'primitive' in the 1930s. We may seek to make the universe calculable, if not exactly knowable, but the accidental is now perceived as an anachronistic explanation of the miscalculated, not a non-existent explanation. We may seek to attribute responsibility for all misfortunes, but this does not directly equate with laying moral blame. Those who see misfortunes as 'merely' accidental are seen as uninformed about risk and its proper management. This may suggest that beliefs and behaviours which may appear anachronistic (in that they belong to an earlier age of fate and chance) seem to persist into high modernity, as a minor strand within a dominant discourse of risk calculation. Not only is a belief in the accidental as an explanatory factor constructed as anachronistic, but accidents themselves are explained as the result of fatalistic beliefs. People should not suffer from the unexpected if they are well versed enough in the risks which predict it. However, the 'fate' appealed to by those in contemporary culture may have very different meanings to that defined by rationalist discourse of the post seventeenth century. In their ethnographic account of lay epidemiology, Davison et al (1992) suggest why ideas which look like 'fatalism' coexist with ideas about lifestyle and the management of risks for coronary heart disease. About 40% of their respondents used notions of fate, luck or randomness when talking about coronary heart disease. This did not, argue Davidson et al, conflict with the notion that one could also take precautions, as these ideas about risks concerned the distribution of disease, rather than the causes. As a category of modern misfortune, heart attacks have many parallels with accidents. The concept of 'risk factors' for heart disease constituted the 'candidate' for a heart attack: someone likely to have one. At one level, this made heart disease predictable and knowable, in both lay and professional discourses. However, such risk factors often failed to explain the actual distribution of disease, as those with no known risk factors were known to suffer, whereas others

with many (such as overweight smokers) lived to a healthy old age. Davison et al suggest that, ironically, the very prioritisation of prevention in health promotion has emphasised 'fatalistic' beliefs. There are, quite simply, no other explanations for those deaths which cannot be accounted for by an examination of risk factors. The victims of accidents are faced with a similar problem in accounting for their misfortune as resulting from the miscalculation of risk: some accidents are seen to 'just happen', however careful one is, whereas other people take what seem to be reckless risks yet survive unscathed.

It seems, then, hardly adequate to characterise this contemporary fatalistic attitude to accidents as merely anachronistic. In contemporary culture such beliefs are held within a specific discourse of risk and calculability. The fields in which the products of this discourse are visible are diverse and pervasive: crime prevention, health, leisure activities. These products do not appear only in academic discourse: they appear in leaflets listing the risk factors that women should be aware of if they walk alone at night, they appear in posters at the doctor's surgery on heart disease and they appear in magazine articles on how to avoid injury on the ski slope. Any cultural analysis of contemporary beliefs in fate must account for their relationship to this ubiquitous discourse of risk factors and their management.

Although discourses of risk in high modernity produce an accident as a failure of risk calculation, there is a gap left by explanatory frameworks. The 'probabilistic revolution' has mapped the contours of risks and their calculation, through which we come to understand that others do not have accidents, but fail to calculate accurately the risks they face. Given the logical problems with translating population rates into an individual risk for accidents, it is not surprising that this does not wholly satisfy at the level of subjective meaning. In explaining the old question 'why me, why now?' the discourses of high modernity provide little comfort: they explain only the general, not the particular. This was also, it was suggested in the last chapter, seen to be true of rational modern discourse, which came to be seen as failing at the level of meaning. What is perhaps new is that

rational discourses did not attempt to provide meaning for the individual. The accident was an inevitable happening; unpredictable at the local level, and for which no one could be blamed. A discourse of risk may provide no solace for the victim of an 'accident' either - but such events are not constructed as morally neutral. As 'chance has been tamed', the occurrence and distribution of accidents is knowable, and the risk factors for them calculable. The victim, ideally, should never have suffered in the first place. Even if not legally (or even morally) blameworthy, they are in part held responsible for their own misfortune.

It may be possible to argue that appeals to chance and fate are in some way evidence of resistance to a discourse in which risk is universally and comprehensively calculable. Certainly there are signs of scepticism, for instance in the front cover of the Sunday Times (Jan 1992), which contained only a heading '1991: a year of glorious follies'; a caption which noted that:

> The Transport and Road Research Laboratory has devised a formula to enable you to calculate your mathematical chance of having a road accident next year. The formula you have to apply is this:...

and, filling the rest of the cover, the following formula:

$$A_c = 0.00633 \exp \{s + g\} \\ (1 + 1.6_{pd}) \\ (_{pb} + 0.65_{pr} + 0.88p_m) \\ M^{0.279} \\ \exp \{b_1/Ag + b_2/(X + 2.6)\}$$

The 'folly', it is implied, is that such calculation taken to its logical conclusions clearly becomes ridiculous. Even where risks can theoretically be known and calculated, they have little practical value in the avoidance of particular accidents.

It may be, however, misleading to equate contemporary explanatory frameworks with those of other (past) cultures and see the persistence of ideas in accidents as mere anachronism or resistance to more 'modern' cosmologies. If the myth of the risk society is that accidents should no longer happen, accidents have perversely remained a key concept for analysing misfortune - but they do not necessarily occupy the same position as accidents in a rationalist cosmology. In a risk society, our failures to calculate correctly may be attributed to 'chance', but it is no longer a chance that operates outside the bounds of rational calculation. Rather, the play of chance itself is precisely calculated. Armstrong (1986), in his analysis of infant mortality, illustrated the tension between what was inexplicable within the explanatory frameworks of the first half of the twentieth century and those in the second. Sudden Infant Deaths (cot deaths) are those with no known cause: inexplicable deaths in infancy. Before 1971*, the International Classification of Diseases had no specific category of Sudden Infant Deaths (OPCS 1982). They were, till then, classified as 'sudden death - cause unknown' or 'hidden' in one of the accidental death categories. A rationalist nosology consigned them to a leftover category. Rather like accidents, they 'fell outside the analytical framework', a marginal category which marked the limits of a causal analysis of mortality. Around 1950, argued Armstrong, these deaths moved centre-stage. The very fact that they came with no known cause meant that they were ideal candidates for the new analytical processes of risk calculation, as a challenge with which to demonstrate the universality of emergent techniques of risk calculation. More significantly, they were actually produced by the new framework. A retrospective reading enables such deaths to be extracted from mortality data before 1950 but, as Armstrong argued, they only crossed the threshold of public visibility through new attempts to outline the exact risks of death, and thus explain them.

Cot deaths were, then, until recently very much seen as accidental deaths of infants: random, inexplicable and for which no blame could be imputed. New analytical techniques (those of the 'risk society') appeared to provide an explanation (risk factors) for the previously inexplicable and, in doing so, created

* Sudden Infant Death Syndrome was formally classified as a diagnosis in the 9th revision of the International Classification of Diseases (WHO 1977), although 'cot death' was recognised as an acceptable cause for death certificates in England and Wales from 1971 (see OPCS 1982).

a new category. This is not of course to argue that infants did not die of the same causes before, but rather that unexplained infant deaths were not visible as a discrete category. The new analytical frameworks were manifested through an examination of patterns in the data. The Registrar General noted in the Commentary for the 1954-56 Statistical Review (Registrar-General 1957:168) that there was 'no obvious explanation if these deaths were accidental' of the excess male mortality of 'accidental mechanical suffocation' and that 'there are grounds for believing that a substantial proportion of these deaths may be due not to accident but to obscure natural causes' (ibid:4). Once regularities had been discovered, this group of deaths could be promoted to the main body of the medical classification. A growing body of research produced regularities to replace the random occurrence of earlier infant deaths: they are for instance correlated with factors such as the sex of baby, socio-economic class and co-existing respiratory infection (OPCS 1982). Ironically, this stress on the 'non-accidental' nature of Sudden Infant Death in the new regime implies that there are still accidents: still events which are really random and due to chance.

Paradoxically, then, accidents are no longer the inevitable and necessary marginal remnants of a cosmology, but have been brought to the very centre, for the accident is a paradigmatic event of risk. In this way the dual nature of accidents in contemporary discourse is, to some extent, unified. For if accidents are the archetypal outcome of the miscalculation of risk, they are paradigmatic event with which to demonstrate the possibilities of risk calculation. In a rational discourse the accident as an event demonstrated the failures of the dominant cosmology, for it reminded the victim of the unpredictable nature of the real world set against the predictable nature of the theorised world. As an event, the accident today demonstrates only personal failure: the inability of individuals to negotiate an all encompassing risk environment, in which the accident should not happen. As explanation, the accidental was a despised but necessary part of a rationalist discourse, for it demonstrated a belief in the potential for scientific explanation and the left over category of 'coincidence' for what could not be explained. As

explanation, the accidental is now merely despised. Ideally, in the new order, accidents should not happen.

However, there is still evidence of appeals to a rather more modernist notion of the accidental, for instance in the reclassification of some infant deaths as 'non-accidental', and the resistance to an all-encompassing model of risk assessment suggested by the Sunday Times front cover. Accidents are still ambiguous misfortunes, utilised in contradictory ways in the late twentieth century.

One outcome of this contemporary discourse around risk and accident has been the emergence of a discrete activity known as 'accident prevention'. If we can know the precise risks of accidents, we can manipulate them, and thus prevent the accident happening. The next chapter traces the emergence of accident prevention and the forms it has taken to explore the location of accidents as a facet of what Beck has called the 'risk society'.

CHAPTER FIVE

PREVENTING ACCIDENTS

INTRODUCTION

Contemporary life is characterised, it has been argued, by discourses of risk and calculability, in which the accident can, in theory at least, be prevented. Indeed preventing accidents has become a widespread professional activity in the second half of the twentieth century, with many public bodies having a legitimate role to play. These include voluntary organisations such as the Royal Society for the Prevention of Accidents (RoSPA) and the Child Accident Prevention Trust (CAPT); health authority public health departments; local authorities and government departments such as the Department of Transport and the Department of Trade and Industry, which collate statistics on traffic and home accidents respectively. On a day to day level there are a number of individuals whose remit includes monitoring, and offering advice on the prevention of, accidents. These include health visitors for accidents to young children in the home and trade union health and safety officials. In all areas of social life there are professionals who assess accident risks. The activities of these professionals construct individual workers, parents and children as potential accident victims who, by knowledge and vigilance, must engage in constant surveillance of their risk environment.

In David Copperfield, Charles Dickens' Mr Micawber could claim that 'Accidents will occur in the best regulated families and in families not regulated ... they may be expected with confidence and borne with philosophy'. By 1993, such sanguine

philosophy was no longer possible: 'Most accidents' claimed Britain's Department of Health, 'are preventable' (DOH 1993:9). Official health policy, both international and national, reflected this focus on accidents as preventable misfortunes, and also prioritised such prevention as a public health problem. The World Health Organisation (WHO) policy document Health for all 2000 (WHO 1985) set out targets for its European region:

> By the year 2000, deaths from accidents in the Region should be reduced by at least 25% through an intensified effort to reduce traffic, home and occupational accidents. (WHO 1985:48)

Given the trend of decreasing death rates from accidental injury, this target was likely to be exceeded in Britain, so new targets for prevention were set in the policy document The health of the nation, which identified accidents as a 'Key Area', or a national priority for health. The targets were:

> To reduce the death rate for accidents among children under 15 by at least 33% by the year 2005 (from 6.6 per 100 000 in 1990 to no more than 4.4 per 100 000)
>
> To reduce the death rate for accidents among young people aged 15-24 by at least 25% by the year 2005 (from 24 per 100 000 to no more than 18 per 100 000)
>
> To reduce the death rate for accidents among people aged 65 or over by at least 33% by the year 2005 (from 55.8 per 100 000 to no more than 37.4 per 100 000) (DOH 1992)

This chapter traces the emergence of the accident as a preventable event, and the particular forms techniques of accident prevention have taken in the second half of the twentieth century.

THE ANALYSIS OF ACCIDENTAL DEATH: THE RISE IN EPIDEMIOLOGY

A focus on the prevention of death and injury from accidents has been a relatively recent phenomenon. Until the mid twentieth century, prevention may have been implicit in the patterns produced by ever more detailed statistics, but was not explicitly addressed as a discrete activity. Indeed, prevention was sometimes seen as a largely improbable enterprise. In 1941, commenting on the increase in aviation accidents, Greenwood et al were pessimistic about change, even with the sobering influence of the world war:

> Unless the experience through which so much of the world is now passing excites such a passionate hatred of the air that aeroplanes are classed with opium and proscribed - a fantastically improbable exhibition of herd intelligence - civil aviation may well compete seriously with motoring as a cause of death (Greenwood et al 1941)

There may have been a growing awareness of accidents as a cause of death and disability, but until the second half of the twentieth century, there was little public concern with preventing these events. Turner (1978), in his analysis of disasters, noted that social scientists had neglected the causes of disasters as a legitimate arena for research in the first decades of the twentieth century:

> In retrospect, it seems rather strange that there could have been such an extensive, yet tacit, agreement that there was no point in devoting time and resources to the examination of the factors which led to the production of the disasters (Turner 1987:39).

The same point could be made about accidents more generally, and the neglect was not confined to social scientists. Policy makers and the medical profession had little interest in studying the causes of accidents or how they could be

prevented. After the First World War the British Ministry of Reconstruction noted, for instance, that health legislation was conventionally concerned with epidemic disease, and that there was also a 'heavy burden cast upon [public] funds by incapacity to work due to 'debility' and similar conditions of ill health' which they believed should be addressed (Ministry of Reconstruction 1919). No mention was made, though, about accidental injury or its prevention. Even by the end of the Second World War, in 1944, a Ministry of Health document outlining the government's plans for the new National Health Service was concerned with the treatment of injury, and the development of fracture treatment and rehabilitation in particular, but again did not discuss prevention. Accidents, it seems, were primarily a challenge for the rehabilitation services:

> the modern aim is total rehabilitation and re-employment ... The difference between the facilities [of different hospitals] may determine whether or not the patient ultimately makes a full recovery from the effects of his injury (Ministry of Health 1944:7)

That accidents would happen was a given: the problem was one of dealing with their outcomes and returning victims to gainful employment as soon as possible.

The definitions of accidents in these reports from the early twentieth century assume a consensus. They are definitions that derive from 'common sense' and ones that appeal to a shared public view. These definitions echo the characteristics of accidents outlined in Chapter One: they are essentially unpredictable and unmotivated events, for which medicine can be expected only to respond, not prevent. So, for example, one report from the United States from 1949 defined accidents as including 'any suddenly occurring unintentional event which causes injury or property damage' (National Safety Council 1949) and the World Health Organisation defined an accident as 'an unpremeditated event resulting in a recognisable injury' (WHO 1957). This view of accidents as being essentially one shared by the public was reflected in legislation. The 1946 National Insurance (Industrial Injuries) Act set out the basis for claiming compensation for loss

through industrial injury that occurred by accident. Injury was defined as 'physiological injury or change for the worse' and an accident was 'an unlooked-for mishap or untoward event which is not expected or designed'.

This assumption of shared public and professional definitions of accidents disappears in the middle of the twentieth century, when a self-consciously professional opinion emerged. This professional voice situates itself as explicitly opposed to lay beliefs about accidents, which stress their unpredictable and therefore unpreventable nature. A key paper is perhaps Gordon's (1964) paper on the epidemiology of accidents, first published in 1949. Gordon argued that wartime experiences suggested that the incidence of trench foot, originally thought to be caused by cold, and therefore not amenable to medical research and intervention, was affected by foot hygiene, which could be improved with careful investigation as to which men became diseased, and what factors contributed. In peacetime, accidents posed a similar challenge. Although they might appear as inevitable features of the natural world (much like cold), a careful analysis of the interactions between hosts, agents and vectors would reveal regular patterns. Like many endemic diseases, certain accident rates (such as those for home accidents) appeared remarkably regular from year to year. Others (such as road traffic accidents) mimicked the seasonal incidence rates of other diseases. 'Accidents' argued Gordon, 'evidently follow as distinctive movements in time as do diseases' (Gordon 1964: 20). As such, they could be brought within the realm of public health medicine, with their epidemiology mapped and interventions devised to reduce their incidence.

By the 1960s, accidental injuries had become a major public health concern in Britain and the United States, with the medical profession concurring with Gordon's assessment that accidental injury was a 'disease' like any other. One report, which described accidents as the 'neglected epidemic of modern society ... the nation's most important environmental health problem' (National Research Council 1966), castigated the public for their apathy, suggesting this could be countered by utilising education methods developed for public information about

polio and other epidemics. A British report (Royal College of Surgeons c1966) echoed this tone of crisis, claiming of accidents that: 'this disease is endemic and universal, continuous and increasing'. More significantly it concluded that few accidents were 'unpreventable', given that those due to unpredictable natural forces were rare.

The relatively recent concern with accidental injury and its prevention is explained in the epidemiological literature as a consequence of the increased relative mortality rate of accidents compared with other causes of death, once infectious diseases had declined in importance as a cause of death in the West. Accidents became the leading cause of death in childhood from the 1940s onwards and, although fatal accident rates have declined in recent years in industrialised countries (NAHA/RoSPA 1990), they remain the third leading cause of death and a major cause of disability (WHO 1985). However, the relative increase of accidental deaths as a proportion of all deaths since the middle of the twentieth century does not convincingly explain the rising interest. Farr, the first statistician to the Registrar General for England and Wales, noted as long ago as 1839 that the rate of 'violent death' (which included accidental deaths) equalled that from typhus in the year under review and were, moreover, of particular concern as they were of those 'in the meridian of life; and in a political sense [whose] lives are of the highest value' (Registrar General 1839:75).

The comparative neglect of accidental injury in public health until the middle of the twentieth century is also sometimes attributed to difficulties in conceptualising accidents within a medical model of disease: 'we recognise that many factors are involved in the causation of accidents, whereas certain diseases are caused by a single germ or agent' (American Public Health Association 1968). Ironically, in the debate about the relative difficulty of claiming compensation for industrial disease, ill health caused by accident is perceived as resulting from an immediate and single cause as opposed to disease which has complex causal origins (Stapleton 1986). As was suggested in Chapter Two, it was in part the development of medical nosology in the nineteenth century which classified the accident in moral

terms, to organise this disparate range of causal factors. By the middle of the twentieth century, this classification was found wanting, as public health attempted to bring accidents within its remit as an 'epidemic' like any other.

Another explanation for the emergent interest in accidental injury as a disease, describable with the same language used for infectious diseases, lies in analysing it as an intra-professional strategy used by specialists in accident and emergency medicine to develop an autonomous sphere of medical practice and expertise. There is some support for this view. Calnan, for instance, argued that up until the late 1950s in Britain the hospital accident and emergency department (then generally called 'casualty') had been a neglected area, exciting little professional interest (Calnan 1982). Examining the position of a casualty department in terms of Freidson's (1970) analysis of the development of professions, Calnan noted that it posed several problems for professional autonomy. First, the work flow is client-controlled: most attenders at casualty departments are self referred, and come at any time and with almost any medical condition. Second, although situated in the hospital, casualty departments are at the same time part of the less prestigious 'community' provision, in that they are basically primary care facilities. Only after the Platt Report of 1962 were district hospital department developed as centres of specialist trauma treatment, with a change of name from 'Casualty' to 'Accident and Emergency' to underline their status as specialist centres, rather than walk-in primary care departments. The powerful professional lobbies behind the reorganisation of hospital accident and emergency departments were orthopaedic surgeons and the Casualty Surgeons Association, who had perhaps a strategic interest in developing less 'client centred' services. In terms of exclusionary professional tactics, moves to define accidents (by definition the legitimate object of accident and emergency work) as a disease like any other, and one requiring a specialised medical approach, seem functional.

Although a claim for the need for a uniquely expert approach to accidents may well have reinforced professional strategies, there remains a question about why such claims were not made (or at least not met) until the middle of the twentieth

century, despite the growing importance of accident cases as a proportion of medical work during the nineteenth century. As Cooter notes, 'by the 1880s the accident victim was the archetypal patient in large voluntary hospitals' (Cooter 1993:8). For Cooter, it was largely economic forces which explain both the emergence of accident medicine as a specialism and the growth in status of orthopaedics as a profession. The management of accidents was neglected as a professional strategy until into the twentieth century in part because they happened to the labouring classes, and (unlike infectious disease) did not threaten the health of the wealthy or influential. Orthopaedics developed in the treatment of crippled children, war-wounded veterans and industrial accidents, who largely excited only 'professional indifference' (Cooter 1993:81) as they provided no potential for lucrative private practice, and remained treated by local general practitioners, poorly skilled hospital out-patient staff or (by the end of the century) volunteers from the St John Ambulance Brigade. Before the 1880s, argues Cooter, there was little medical or surgical interest in the treatment of accidents evidenced in the professional literature, and what little there was tended to focus on those that were likely to affect the middle classes, such as street and railway accidents. It was economic factors which also provided the incentive for the organisation of accident services and the specialisation of those who provided them. Cooter takes the building of the Manchester Ship Canal as a symbolic pointer to the emergent professionalisation of accident treatment at the end of the nineteenth century. Between 1888 and 1893 the Manchester Ship Canal Project employed 10,000 to 20,000 labourers, for whom an integrated accident and medical service was created, consisting of a network of three hospitals and local general practitioners (Cooter 1993:100-2). This service, argues Cooter, met the short term economic needs of the Company for minimising the cost of accidents (time off work for the injured and also those who had to take them to hospital, together with the growing possibility of employer's liability for accidents in the workplace), who had economic incentives to finish building on time. It also epitomised a new approach to efficiency in the management of labour, in which workplace accidents came to be seen not as isolated misfortunes but as a class of events which could be the object of medical concern.

This account of professional interests has, then, perhaps more significance for explaining the emergence of accident medicine as a specialty rather than the development of a preventative approach, for during the period of Cooter's account (1880-1948) the debates are around the proper treatment of accidents and such questions as who should treat them, how they are to be paid for and how the victims are to be transported to hospital. There is no concern here with preventing such events in the first place and with seeing accident causation as well as treatment as an activity properly within the province of medical experts.

What is perhaps of more interest here is the *content* of this new professional voice on accidents. These later reports on accidents overtly situated their approach as counter to a common sense, or lay understanding, of the cause of accidental injury, and this self-proclaimed attempt to correct public misconception continued throughout the second half of the twentieth century.

The focus of the emergent 'professional' view of accidents was their predictability and thus preventability. It was suggested in the previous chapter that one facet of the articulation of accidents as outcomes of risk calculations rather than as marginal events in a rational universe was that they became central to an understanding of risk and its management. The new explanatory frameworks of risk calculation found in accidents a new challenge: to predict the random. Throughout the 1950s and 1960s, the raw materials necessary were gradually produced as the data on fatal accidents were analysed in ever increasing detail. In Britain, Coroners were required in 1948 to include information on the death certificate about where the fatal accident had occurred. The tables included in the statistical returns of the Registrar General illustrate the growing interest in categorising and counting accidents. The first kinds of accidental death that were separated out in their own table in the Registrar General's annual reports were those happening in mines and railways. In the middle of the twentieth century, in 1950, there are three tables which describe accidental deaths in the annual report; one listing poisonings by place of occurrence, age and sex; one describing deaths from violent causes according to the nature of the injury and the third by external

cause. Gradually, other information was reported: in 1958, for instance, a further table was added, to classify deaths from road accidents and from accidental falls. In the 1965 report, deaths from accidents in the home and residential institutions were also included in separate tables.

In Britain, the development of a separate 'professional' voice which could speak about these new tabulations of fatal accidents, can be traced for example through the changing activities of the Royal Society for the Prevention of Accidents (RoSPA). RoSPA was founded in 1923, originally as the National 'Safety First' Association which evolved from a conference concerned with the increased number of traffic accidents during First World War lighting restrictions (RoSPA 1992). Despite the original concern with what could be termed 'external' factors (such as dangers in industry and on the roads, exacerbated by wartime restrictions), by the 1930s RoSPA's remit had enlarged to include accidents in the home, and the Home Safety Committee was formed in 1932. One RoSPA poster dating from the Second World War combined warnings about specific war time dangers with advice on preventing accidents in the home. Headed 'Mrs Wiseman on Home Guard', it included the following illustrated couplets:

> Baby is too young to teach -
> So put the teapot out of reach.
>
> All good H.G.'s hide their rifles away -
> Before young Tommies come out to play.
>
> Take baby, well wrapped, when you answer the door -
> Or baby may never need bathing no more!
>
> Tommy was tempted but didn't touch -
> The queer ticking thing near the rabbit hutch. (RoSPA 1992)

Whether at play, at home or at work the general public were encouraged to abandon their common sense views on the unpredictability of accidents. Prudent action could not only save lives threatened by the risks of war, but also lives endangered by the more mundane risks of every home. Reducing the number of accidents became not merely a matter of reducing dangers in the external environment (of the factory, or dark wartime streets) but also one of assuming personal responsibility for assessing risks in the immediate home environment.

By 1950 a Ministry of Works inquiry into accidents in the home could confidently conclude that 'the majority of home accidents can be attributed to personal causes...or such factors as ignorance, lack of judgement, carelessness or psychological disorders' (Ministry of Works 1950:46). A study of factory accidents, despite admitting that 'accidents are built into most industrial work', bemoaned the apathy of workers who assumed 'that little could be done to avoid accidents' (National Institute of Industrial Psychology 1971). On childhood accidents, one writer notes that 'It is unfortunate that the word 'accident' tends to imply an event which is unpredictable and therefore unpreventable, but of course accidents are as capable of analysis as any other event' (Jackson 1977:4). In literature aimed at public health professionals and at potential victims and their carers, the messages that accidents are 'by no means random occurrences' (Child Accident Prevention Trust 1989) and that it is 'vital to counter the view that accidents are random events due to bad luck' (Henwood 1992) become ubiquitous.

Claims for the legitimacy of the epidemiological approach centre on the patterned nature of morbidity and mortality from accidental injury. When aggregated, accidents appear not as unique misfortunes, but as statistically predictable events, with identifiable social, environmental, psychological and biological risk factors.

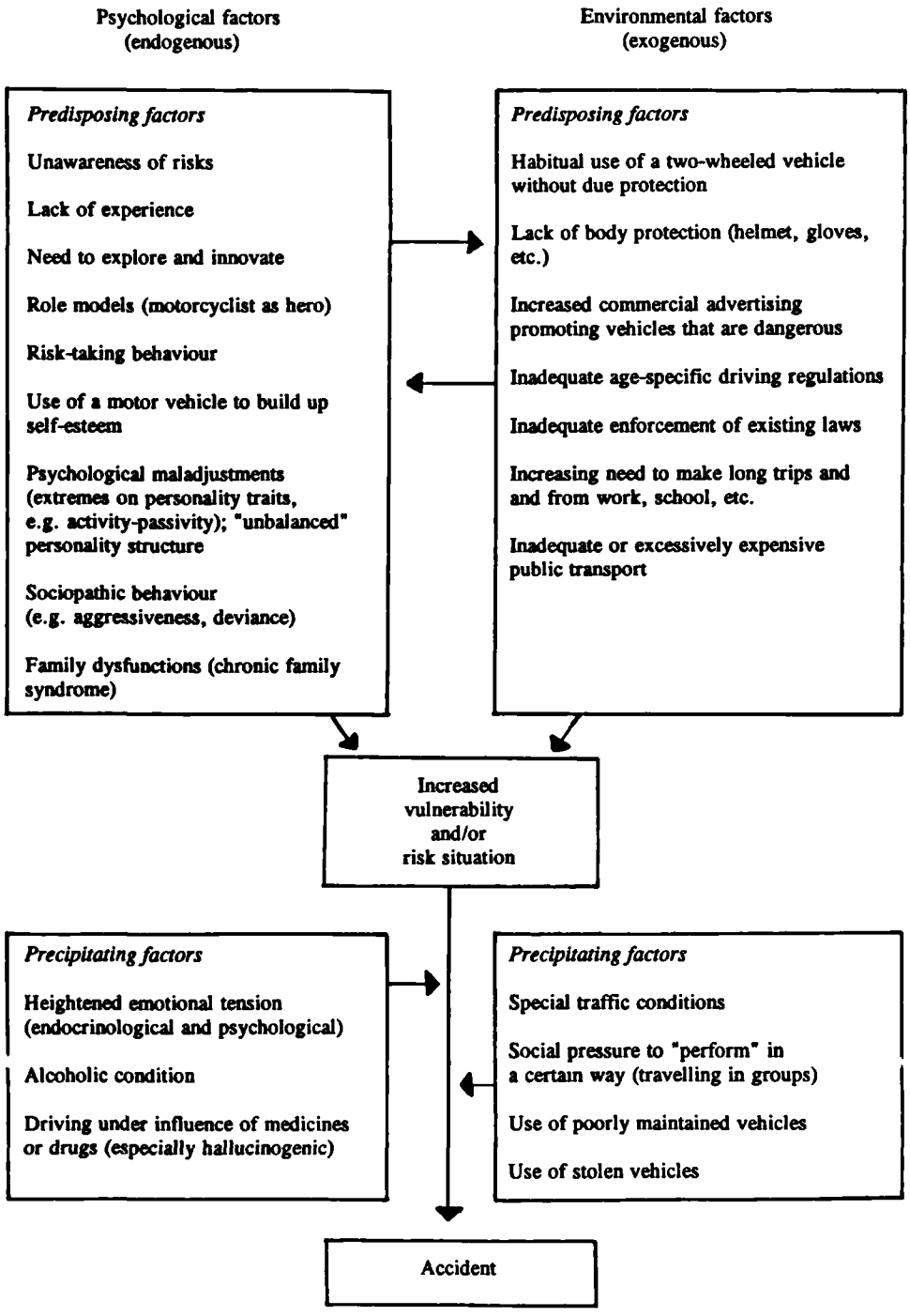
First, a range of social factors have been identified as correlates of increased accident risk. Accidents in the home requiring hospital treatment are more common in socially disadvantaged households, those with overcrowded accommodation and those in rented accommodation (Alwash and McCarthy 1988).

Fatal accidents disproportionately affect those from lower social classes: indeed, for children the social class gradient for accidental deaths is greater than that for any other cause of death. For girls aged 1-14 years with a father from social class V, the risk of a fatal accident is three times that of those with a father in social class I. For boys, the risk is five times greater (DHSS 1980:175). Other social factors correlated with high accident rates include how often the family has moved house and low maternal age (Stewart-Brown et al 1986), and the number of stressful life events suffered by a family (Sibert 1975).

Biological factors have a part to play. For instance, lack of development of motor ability and speed judgements make children particularly vulnerable to accidents as pedestrians on the roads (Ampofo-Boateng and Thomson 1991; Sandels 1975). Physical disability contributes to the high proportion of home accidents among the elderly (Graham and Firth 1992) and poor physical co-ordination makes some children more vulnerable than others (Arnheim and Sinclair 1975).

As well as the social and biological factors which have been correlated with accident risk, there are a wealth of psychological factors. A WHO report (1981) on accidents involving children and adolescents summarises the psychological and environmental predisposing factors which research has found to increase vulnerability to a 'risk situation' and various 'precipitating factors' which increase its likelihood (see Fig 5 on page 140). Psychological traits such as 'unbalanced personality, excessive aggressiveness/passivity [and] over reaction to stimuli' and characteristics of the family, such as size, marital discord and parental substance abuse are mentioned as predisposing factors. There is some evidence that traits like aggression and over-activity are particularly associated with accident rates (Bijur et al 1986), particularly for boys (Bijur et al 1988). Whether being 'accident-prone' is in itself a psychological trait has also been debated, with some evidence that treatment for an accident is a predictor for future serious accidents (Kendrick 1993). Such evidence has led some to conclude that 'accident-proneness' is 'a stable personality characteristic that predisposes an individual to have accidents' (Husband 1973). However, it has also been claimed that such

Figure 5 Psychosocial factors related to accidents in childhood and adolescence



Reproduced from WHO (1981)

arguments are a misinterpretation of statistics. As accidents are relatively rare events, we would not expect the number of accidents an individual has to be randomly distributed: their rates are better modelled with a Poisson distribution, which reflects that some individuals are likely to suffer more than one accident purely by chance (Langley 1982).

An exhaustive review of the literature on accident rates is outside the scope of this thesis. The above illustrations indicate, though, the explosion of knowledge about the risk factors for accidental injury and death in the second half of the twentieth century. Reports from the fields of epidemiology and health education, which cover accidents in fields as diverse as skiing (Philipp and Philipp 1988), fishing as an occupation (Rafnsson and Gunnarsdottir 1993) and farms (Cameron et al 1992, Cameron and Bishop 1992), attest to the growing sophistication of knowledge about risks of accidents for different occupations, their interactions and possible preventative measures. 'Can we help to prevent skiing accidents?' was the, presumably rhetorical, title of one report (Philipp and Philipp 1988). The very act of collating the data necessary for these studies, and of advocating the collection of more data (as almost all do) is in itself seen as a preventative activity. The surveillance of risks is in part a necessary precondition to their management: indeed, surveillance emerges as the key to management.

Cross tabulations of these various and diverse risk factors enable dangers to be more and more exactly specified. The risk of accidental drowning, for instance, depends on age and site, with young children most at risk from baths and garden ponds and older children from canals and the open sea (Kemp and Sibert 1992). Psychiatric disorder in mothers interacts with social class to increase accident risk in children: Brown and Davidson (1978) found that the children of working class mothers with psychiatric disorder had accident rates of 19.2 per 100, compared with 9.6 per hundred for those with no psychiatric disorder and rates of 5.3 and 1.5 per hundred for those middle class mothers with and without psychiatric disorder, respectively. Increased stress has been suggested as the mediating variable, as deprivation may increase stress, so reducing parents' ability to

supervise children (Alwash and McCarthy 1987). The development of computer technology has enabled statistical techniques such as logistic regression and factor analysis to be applied to multiple risk factors (see for instance Stewart-Brown et al 1986). The potential for correlating these risk factors seems limitless.

As Henwood (1992) concludes, 'epidemiological evidence makes it clear that the risk of accidents is largely quantifiable in terms of social, environmental, lifestyle and demographic factors' (Henwood 1992). Accidental injury is demonstrably non-random, in that its epidemiology can be mapped. With this mapping, in its ever increasing sophistication, comes the knowledge necessary for prevention. Ultimately, therefore, accidents can be prevented:

> RoSPA recommends that all health authorities adopt a positive approach to accident prevention based on the premise that the majority of serious accidents could be avoided or prevented and that the risks of serious injuries can also be reduced. (Henwood 1992)

Given the boundless possibilities that exist for monitoring risks and for preventing accidents, it is not surprising, perhaps, that the literature on accidental injury is today largely a literature of prevention, rather than of treatment or rehabilitation. It seems more likely, then, that the emergence of accident prevention cannot be adequately explained merely as an inevitable reaction to the growing relative importance of accidental injury in a time of low overall mortality, or as a professional strategy employed by medical specialists, but rather may be a specific product of what Giddens has called 'high modernity'. Tracing the emergence of accident prevention as a discrete professional activity suggests that it has been made possible within a discourse of risk and its management. Preventing accidents, as well as ameliorating their effects, is entirely justifiable: preventing an accidental injury rather than attempting to manage its medical sequelae is clearly a humane and reasonable goal. Accidental injury causes death, disability and distress; its social cost is incalculable. However, the kind of prevention implied by many of the reports examined above is an example of the kind of 'privatised'

risk management described by O'Malley (1992) in relation to crime prevention. Rather than accepting the self evident 'social good' of preventing accidents, it may be worth examining why particular strategies are chosen in preference to others, and what implications a 'risk management' strategy has for the meaning of accidents as misfortunes.

PREVENTING ACCIDENTS

The possible approaches

The major problem for an approach to reducing accident rates that depends primarily on primary prevention is that these 'risks' extracted from tabulated data on accidents only exist at the population level. Translating them into individual risks is a rather misleading activity. It may be worth, then, looking at how epidemiological data on accident rates in populations and subgroups of those populations has been utilised in the activity of accident prevention.

Like any other health promotion activity, accident prevention can be modelled as operating on one or more of three levels. Tertiary health promotion is an activity concerned with reducing the effects of existing disease (or accident). Such activity would include the improved rehabilitation services proposed by the Ministry of Health noted above, or First Aid training. Secondary health promotion aims to reduce the chance of disease happening in groups from a population who have been identified as 'at risk'. In terms of accident prevention this involves reducing the chance of injury if an accident does happen by, for instance, wearing seat belts in cars or crash helmets on bicycles. Primary health promotion activity is directed at 'keeping healthy', at reducing the chance of disease risk factors developing in the whole population. It is this level (the prevention of the accident happening in

the first place) which uniquely characterises contemporary accident prevention. It is evidenced in a broad range of activities, such as teaching road safety (or 'kerb drill') to children and persuading parents to install a vast range of safety equipment in the home and be vigilant of the potential risks their children face (see, for instance, RoSPA 1984; Smith and Smith 1991).

At all these levels there are three strategies which are conventionally associated with accident prevention activities, the '3 E' s'; namely education, engineering and enforcement (Cliff 1984). Education involves raising awareness of hazards and how to avoid them. Examples might include road safety training for children or leaflets about hazards in the home. Engineering involves altering the environment to reduce the chance of an accident happening, or to reduce the damage done if an accident does happen. Examples might include fluorescent stripes on children's outdoor wear to make them more visible to motorised traffic or child-resistant pill bottle tops. Finally, enforcement involves providing formal sanctions against risk taking behaviour (such as not wearing seat belts or helmets). The WHO's Health for all policy suggested that a combination of engineering and enforcement strategies would be most effective:

> In the prevention of accidents ... programmes should be developed with a view to determining and then eliminating or reducing hazards... and to designing safer goods... encouragement should be given to the adoption of internationally agreed vehicle design changes that will improve health and safety ... Legislation and economic incentive should be established to encourage the design and marketing of safer products. (WHO 1985:49-50)

The health of the nation (DOH 1992), in outlining possible approaches to achieving the targets noted above also recognised that a multi-agency approach (establishing 'healthy alliances') which looked at various strategies should be adopted. Significantly, though, it also noted that:

> the government will rely primarily on information and education and will avoid the imposition of unnecessary regulations on businesses and individuals (DOH 1992:106)

An adequate explanation for this emphasis, in contrast to the more social programme suggested by the WHO, must lie in part with the economic and ideological concerns of the Conservative government of the time in Britain. A programme such as that advocated by the World Health Organisation would incur considerably more costs than one based on education, and Britain, having not signed the Health for all by the Year 2000 declaration, had no obligation to wide ranging social interventions in order to reduce accidents. In keeping with new Right concerns with 'rolling back the State', there was also an evident wish not to appear to impinge on freedom of choice and individual liberty (see DOH 1993). However, this emphasis on education as a primary method is largely shared by the medical profession. The Royal College of Physicians, for instance, noted that there was scope for environmental and legislative change, but concluded that:

> In the end, however, it is changes in attitude and behaviour that will bring accident and injury experience down to acceptable levels (Royal College of Physicians 1991:120)

At first sight this prioritisation of education and changing behaviour as the route to accident prevention seems strange, as there is little evidence that it was likely to succeed in terms of an instrumental effect, ie the impact on accident rates. There is some evidence that both engineering and enforcement strategies can reduce the mortality rates from specific hazards. The introduction of legislation to enforce seat belt use for drivers and front seat passengers in Britain in 1983 is one example of an 'enforcement' strategy that achieved the aim of reduced mortality. The Department of Transport evaluated the new legislation (DOT 1985) and found first that it was successful in changing behaviour. Whereas education strategies had only raised seat belt wearing to 30% of front seat occupants, the new law raised it to over 95%. Second, this change in behaviour resulted in a reduction of

the numbers of drivers and front seat passengers killed or seriously injured. The numbers of drivers killed or seriously injured in road traffic accidents fell by 23% after the law came into effect, and the numbers of front seat passengers killed or seriously injured fell by 30% (DOT 1985).

Engineering approaches have also had some documented successes. The introduction of flameproof material for night dresses and the child resistance pill bottle tops reduced mortality rates in childhood from burns and poisoning respectively (Sibert et al 1977) and changes to road layouts to separate pedestrians from motorised traffic have been shown to reduce childhood road traffic accidents (Sutherland 1992).

One notable success was the 'Children can't fly' campaign (Spiegal and Lindaman 1977), which was reported to utilise both engineering and education strategies to reduce the number of falls from windows, which accounted for 12% of all accidental deaths in New York City. The programme involved a media campaign highlighting the dangers of open unguarded windows, door to door visits from an outreach worker who counselled parents on prevention and the distribution of free easy-to-install window guards for families with pre-school children living in the tenements in high risk areas. In two years, the project recorded a 50% drop in all reported falls from windows and a significant reduction in fatal falls. The strategy that seems to have contributed most to the success of this project, though, was the engineering one: no falls at all were reported from windows where guards had been installed.[1]

The 'success' of such accident prevention programmes is of course difficult to evaluate. Any individual accident event is 'caused' by many environmental, cultural and personal factors, and age specific mortality rates for particular causes

[1]Others have, convincingly, pointed to the limitations of engineering and enforcement strategies, given that individuals may 'compensate' for a safer environment by taking more risks (for instance driving faster if wearing a seat belt), and thus risking more accidents (see Adams 1993). However, the argument here is that most of the evidence available to policy makers and health educators suggests the relative success of these approaches in comparison to education.

are usually too small to gauge significant change. Reduced mortality rates are not in themselves evidence of unqualified success, even in terms of health gain, as Roberts (1993) has highlighted in his analysis of the decrease of pedestrian deaths in road traffic accidents. In England and Wales between 1968 and 1987 pedestrian deaths fell by 67% for 0 to 4 year olds and by 39% for 5 to 14 year olds. This represents, argues Roberts, neither the success of road safety campaigns nor improved road designs, but rather the reduced exposure of children over this period to traffic, as they are no longer able to play in the streets or walk to school safely. This may have had the effect of reducing childhood mortality, but possibly at substantial social cost. Car driving has become more common, making roads increasingly hazardous for those children who are using them. In 1961, for instance, 80% of children walked to school. By 1981, 80% of children were being driven to school (Sutherland 1992). This decrease in the pedestrian activity of children clearly has implications for their physical health, as opportunities for outdoor play and walking are diminished, but also has implications for psychological health. Mayall (1993) has documented the importance for children of a domain outside the adult controlled worlds of home and school, in which they can develop their own sense of responsibility and rule-making. This domain is potentially eroded by increasing reliance on parents for transport and the perceived hazards of 'outdoors', leading to increasing amounts of children's leisure time being spent in the home. Others have pointed to the decreasing sense of 'community' in streets where heavy traffic has made avoiding traffic accidents a priority (Hillman et al 1990). Roberts (1993) also points out that even with increasing car ownership, one third of families in Britain do not own a car, and so have no choice about escorting their children by car to school. These are the families whose children may also have fewer alternatives to the now-dangerous streets in which to play. Overall, then, pedestrian deaths may have decreased, but the social class profile of mortality is likely to be sharpened.

There are, then, no absolute ways to measure the 'success' of accident prevention, as gains in reducing accident rates may be offset by losses in other prioritised areas of health (such as heart disease, or emotional well being), but there is some

evidence that engineering and enforcement strategies can have a demonstrable impact on mortality rates for specific causes of death. As reductions in the mortality rate from accidental injury, and not social justice or improved psychological health, are the explicit aims of current public policy, these strategies are perhaps the obvious target for further research and activity. National health policy in Britain has, however, emphasised education as the key strategy, and education targeted at primary or secondary prevention. There is also evidence that the largest number of initiatives actually undertaken are based on education rather than engineering or enforcement strategies. One review of accident prevention interventions notes that the majority were designed to raise awareness of safety issues or increase knowledge of risks (Popay and Young 1993). Initially, this bias seems perverse as there is little evidence of success so far, and many reasons to be pessimistic about future success.

Problems with education as a strategy

One initial problem with developing education strategies as the major way of preventing accidents is the logical one which has already been suggested. Risk factors for accidental injury are based on statistical data from populations, and refer to specific population risks based on social and demographic factors such as social class, gender, age and occupation. To develop educational strategies is to imply that these risks can be somehow personalised, and that individuals can alter their chance of having an accident. Statistical correlations alone disclose little about cause, and it has proved difficult to translate 'risk factors' into educational advice for prevention.

In addition, most accidents are multifactorial in cause, and identifying the significant action which would have prevented the disastrous combination of

factors may only be possible with hindsight. As Bytheway notes in a discussion of statistics on accidents to the elderly:

> Statistics on accidents...can beguile one into thinking that the 'problem' is simpler than it really is... It is not to difficult to think up the 'obvious causes' of the typical accident and conclude that if only the old person had looked in all directions before crossing the road (or whatever) the accident could have been prevented (Bytheway 1978).

After the event it may be possible to identify causes, but prediction, with so many possible factors to consider, is more problematic.

There is little evidence that education has had any impact at all on accident rates (Croft and Sibert 1992). One intervention that was evaluated was the Play it safe! campaign, which consisted in part of television programmes aimed at increasing parental knowledge of household risks. No demonstrable effect on associated accident rates was found (Williams and Sibert 1988; Naidoo 1986). Ironically, though, much of the very literature which demonstrates the relative ineffectiveness of education as a strategy also advocates more education as the solution. One study of accidents to children (Carter and Jones 1993) found, for instance, no significant differences in either knowledge about safety or in ownership of safety equipment between parents of children who had had accidents and those who had not, but still concluded that was needed was more education, opportunistically at the child health surveillance clinic and during home visits. Indeed, there seems to be little evidence for even preventative actions such as those recommended by health promoters having much direct impact at all. Melia et al (1989) studied the homes of children who had reported an accident to hospital and a group of matched controls. Although they found that those who had had accidents were more likely to have fathers who were unemployed and have had 'a major upset' at home over the last twelve months, there was no significant difference in the number of safety hazards spotted by health visitors in the homes of the two groups

of children. Hazards were the unsafe practices that are the target of much health promotion aimed at parents: absence of fire guards, loose flexes, access to matches, windows openable by children, and loose stair carpets.

It seems, then, that even if education does change behaviour (itself a rather dubious assumption), the changed behaviour (taking recommended preventative actions) will not necessarily prevent accidents. Education about accident risks was still, though, the most commonly mentioned recommendation in epidemiological reports, even where the complex factors involved in accident causation are noted. For instance, one paper on accidents among elderly people concluded that:

> We had difficulty attributing an event to any one factor. Most resulted from an interaction of environmental hazards, physical disability, and carelessness or excessive risk taking. (Graham and Firth 1992)

yet the authors still went on to suggest that the 'key' question for accident prevention was 'whether an education programme for the whole population or specific targeting of selected patients would be more effective in reducing home accidents?' To educate, this implies, is a virtue in itself.

This conflict in the literature begs the question, why persist in educational strategies when there is little apparent incentive for doing so? The answer implied by the 'professional' voice in epidemiology is that health promotion fails because the public are either ignorant of risks, miscalculate risks or persist with erroneous lay beliefs in the random, and therefore unpredictable, nature of accidents. Education has failed so far because the messages haven't been understood, so more may help. Despite the epidemiological evidence, which suggests that (at its most extreme):

> Nearly all 'accidents' contain an element of neglect by exposure to risk, except those accidents which are true acts of God. Some

> would argue that these too can be avoided by appropriate action (Polnay 1992)

the public are seen to be resistant, clinging on to anachronistic views about accident causation:

> Accidents are not totally random events striking innocent victims like bolts from the blue, although they are often described in this way. Accidents have a natural history in which predisposing factors converge to produce an accidental event ... (Stone 1991)

Accident prevention has, then, been largely concerned with educating the public about the risks they face and how to reduce them, and has been specifically concerned to counter supposed 'lay' views in the random occurrence of accidents. This concern has been in line with official policy aiming to reduce fatal accident rates, although there is little evidence that education has much impact on those rates or (given the similar claims about 'lay' beliefs in both reports from the 1950s and the 1990s) on what are thought to be popular conceptions of accident causation. Despite such apparent lack of success, accident prevention has continued to focus on education.

Conflicts between moral and epidemiological accounts of accident causation

The resilience of these supposed lay theories of accident causation has been widely cited as a hindrance to the development of more sophisticated prevention strategies, in that they have been seen as infecting the purity of a more professional approach. One professional response has been to attempt a sanitation exercise, and adopt a uniquely professional vocabulary untainted by lay concerns. Robertson (1983), for instance, noted that the study of accidents is surrounded by

issues of blame attribution, which do not occur in other health problems: we do not, he argued, seek to attribute blame or seek compensation for the transfer of infectious disease[2]. To avoid these contaminating issues, he advocated a study of 'injury control' rather than accident prevention (Robertson 1983:2) which would focus on injuries as the result of a transfer of energy. This would enable an 'epidemiological model of human damage' (Robertson 1983:23) involving a study of hosts, agents and vectors.

Indeed, there has been a persistent, if muted, voice in epidemiology which has argued for the abandonment of accident as a useful category in medicine. Evans argued that:

> 'Accident' conveys a sense that the losses incurred are due to fate and are therefore devoid of rational explanation or predictability. Yet the motivation to study subjects like traffic safety is to discover factors that influence the likelihood of occurrence of, and resulting harm from, 'crashes', the preferred term (Evans 1993)

Evans' objections to the term 'accident' are again that it is somehow contaminated by lay associations of an unwilled and unknowable process; it 'suggest[s] in addition a general explanation of why it occurred without any evidence to support such an explanation... the word accident [should be replaced] by a more objective and crisp word' (Evans 1993). In the same vein, Doege (1978) argued that it was 'time for medicine to dispose of the "accident" and "accidental injury"', given that it is an 'ambivalent, misleading anachronism' (Doege 1978). There have been some successes in abandoning the word 'accident' with all its connotations. One has been the retitling of the OPCS series that reports on deaths from ICD causes 800 -999 (DH4). Until 1991, it was titled Accidents and violence (OPCS 1991a). In 1992, it was renamed Injury and poisoning (OPCS 1992). These attempts to substitute a more 'objective' word which does not carry 'lay' connotations of

[2] Although it might be noted that this may be no longer true, given, for instance, the debate around compensation for HIV infection from contaminated blood products.

substitute a more 'objective' word which does not carry 'lay' connotations of chance and luck are, however, undermined in two ways which reflect the paradoxical nature of accidents in the late twentieth century, noted at the end of the last chapter.

First, if epidemiology has been increasingly concerned to make accidents predictable and preventable, somehow sanitised of their moral lay connotations, it has paradoxically magnified both the uniqueness of the individual accident and the moral dimensions of that event. The space in which 'real' accidents, events for which no explanation can be provided and for which no one can be blamed, may have been diminished by increasing the domain of the known and patterned. What remains, however, are still the remnants of a medical classification system: random, individual misfortunes which are not amenable to the statistical explanations of epidemiology. Epidemiology attempts to map accidental events, but inevitably such mapping is incomplete, and there is still a marginal category not yet accounted for. A left-over category of 'mere accident' is still created by exclusion from other objects of medical enquiry, such as non-accidental injuries for the casualty doctor, Sudden Infant Death Syndrome, or possible homicide for the forensic pathologist. It is not just 'lay' beliefs which contaminate the epidemiological accident, but those generated by the very logic of the nosology which created 'accidents' as a marginal category of disease.

The logic of nosological classification provides a second source of resistance for the claims for an 'objective' definition of accidents, in that these injuries are difficult to classify if divorced from their causes. All head injuries are not the same, even if the eventual medical sequelae are. As a text book on forensic medicine notes, the wounds sustained by accident are quite unlike those from homicide or suicide, which

> follow certain traditional rules ... accident is something unforseen. It is not planned and does not, therefore, develop along orthodox lines (Simpson and Knight 1985: 68)

It is not just that accidents were constructed through what was left over after other, more patterned causes of death were accounted for, but that this exclusion was originally organised around moral enquiry. Even Doege, in his call to abandon the term 'accident', noted 'a basic need to distinguish between intentional and unintentional injury' (Doege 1978), although he provided no clinical rationale for such a need. It seems impossible to adequately describe accidents, even in a medical discourse about injury, without appeal to the moral discourse which creates them. As an example, one study of farm accidents (Cameron et al 1992), mentions the following contributing causes in addition to the purely 'epidemiological': trespass, inadequate supervision, smoking in a barn, lack of prosecution of farmers who allow children to ride on or drive tractors and lack of legislation prohibiting the use of all-terrain vehicles without crash helmets. Any account that includes individual misfortunes can, it seems, only adequately describe accidents by reference to the moral, and often legal, factors which surround them. The creation of accidents as a nosological category was predicated on a moral classification, with which new classifications based on risk and its assessment come into perhaps inevitable conflict.

To develop a purely clinical discourse of accidents as injuries, stripped of these social and moral connotations, requires perhaps some consensus about the proper object of that discourse: what is to count as a 'proper' accidental injury. Achieving a consensus about what does constitute an accident has proved, though, problematic. Even restricting attention to events with physical injuries as outcomes leaves several possible overlapping sets of events as contenders, including minor injuries, those requiring hospital admission or treatment and those resulting in death or long term disability. Fatal accidents are very rare occurrences, but accidents for which medical attention is sought are far more common. Estimates are that each year one child in five visits an Accident and Emergency department (Sibert et al 1981) and similar proportions seek medical care from their general practitioner (Agass et al 1990, Carter and Jones 1993). Around 10, 000 children each year are permanently disabled through accidental injury (CAPT 1989).

These events, although they may be all caused by 'accidental' injuries have rather different aetiologies as well as outcomes. They are, in short, the products of quite different maps of risk factors. Stewart-Brown et al (1986), for instance, noted that these varying case definitions affect the risk factors which emerge as relevant. They found that large family size and loss or replacement of a natural parent were only risk factors if accidents to children were defined as those resulting in hospital admission, not for accidents with other outcomes. Environmental risk profiles also differ depending on case definition. The most hazardous site for these different kinds of accidents is different: most non-fatal accidents happen at home, whereas the road is the site of most fatal accidents (Walsh and Jarvis 1992). Poisoning accounts for few deaths in under fifteen year olds, but a high proportion of hospital admissions (Woodroffe et al 1993). Epidemiology may, then, be clear that an accident is not what the public think it is, but there seems to be as yet no consensus about any clinical definition which would produce a suitable object for a purely clinical discourse.

Sociological explanations for the failure of education

If ignorance and the resilience of lay ideas have been offered by epidemiologists as both explanation for the failure of health education policies so far and as rationale for their continuation, sociologists have concentrated on the structural barriers to the adoption of accident prevention strategies by individuals. In their work on safety on a Glasgow housing estate, Roberts and her co-workers offer a comprehensive structural critique of accident prevention policy (Roberts et al 1992, Roberts et al 1993). They found that although professionals adopted a model which held accidents to be caused by negligence and believed that more education was needed, parents were actually well aware of risks, in fact more aware of specific local dangers (such as unguarded holes in the pavement) than professionals. They took considerable numbers of actions, both individually and as campaigners, to keep their children safe, and of course managed to do so

almost all of the time. Education aimed at increasing awareness of dangers merely increased maternal anxiety as hazards were often environmental ones that little could be done about by individual carers: sockets with no on/off switches, balcony railings which toddlers could crawl under and unguarded holes left by workers. The cost of safety equipment, such as stair gates, fireguards and cooker guards was prohibitive, and again a source of guilt: parents may recognise a need for such equipment, but not be able to afford it. Parents were not ignorant or irrational, argued Roberts et al: they shared to a large extent the concerns of the professionals to prevent accidents.

Structural critiques imply one explanation for the persistence of the educational emphasis in accident prevention, despite the lack of documented success for these strategies. That is, that they function to channel attention away from the structural inequalities which pattern accident rates and instead utilise what Crawford (1986) has called a 'victim blaming' ideology. This explanation has received some attention, from Tombs (1989, 1991) for instance, who has argued in his analyses of accidents in the chemical industry that an ideology of 'accident proneness' which blames the victim for the accident is functional for industry, given that such protective strategies such as thorough testing of new technologies and products for their safety stand as an obstacle to the pursuit of profit. The portrayal of workers, claims Tombs, is contradictory: on the one hand accident prevention relies on the control of worker behaviour, which produces an ideology of passive recipients of safety messages who can have nothing to contribute to the process of safety. On the other hand the workers should, through their actions, pre-empt and prevent accidents. Safety messages for workers focus almost exclusively on their duties to avoid accidents (not drinking alcohol, wearing protective equipment and clothing, knowing the position of fire extinguishers), but the views of individual workers or the trade unions which represent them are often not legitimate, as they encroach on the management's right to manage. In a similar vein, Nichols and Armstrong (1973) argued that the pressure to keep up production in factories meant that safety regulations would routinely be circumvented, regardless of how much safety training or knowledge that workers and foremen received. Improving training (or

even increasing sanctions for breaking health and safety regulations) would, they argued, merely increase the incentives workers and foremen had to hide the accidents that did inevitably occur.

Naidoo (1986:25-6), in an account of the 'Play it safe!' campaign, which aimed to reduce childhood accidents, also argued that educational strategies are underpinned by an ideology of individualism, in which the environmental and structural factors which constrain safety are ignored. Such a focus, she argued, inhibits the development of collective action to achieve change (such as campaigning to improve play facilities) and reinforces not only individualism but, in this case, the construction of parents as having sole responsibility for the safety of their children.

A second explanation: preventative action as talisman

Such structural critiques offer a convincing political account of why education appears to have priority over other possible strategies. They also offer some insight into why epidemiology persists in constructing a 'lay' view as a foil for its more rational expert account; that is, that the construction of 'lay' views as irrational necessitates further attempts to correct them. However, for such strategies to permeate with so little opposition, in such a range of fields, suggests there may be other possibilities, or at least explanations of why education strategies of accident prevention can gain such legitimacy. One further explanation for the endurance of accident prevention which is based on education could also be suggested.

If the preventative actions recommended have no proven utility in preventing accidents, they may have more value as talismans: as rituals appealing not to a rational modernist control of direct causes and their effects, but to a rather different rationality, that of risk and its management. The mountain climbers

whose accidents were reported in the last chapter were seen as somehow responsible for their own accidents if they had ignored or miscalculated risk, even if those risks were not in any causal sense related to the accident they suffered. 'Taking precautions' does not appeal, perhaps, to deterministic model in which certain actions (or inactions) pose a specific danger which can be avoided, but to a more contemporary model of fate and risk. Education strategies persist because they construct the individual as responsible for the surveillance and management of their own risk environment. Although preventative actions may not directly prevent accidents, they demonstrate an adherence to the calculability of risk, and so perhaps reduce uncertainty at a cognitive level.

It has been suggested that discourses of risk may account for the accident as a rather different kind of event from the accident of the early twentieth century. Indeed, from being marginal misfortunes at the boundary of rational classificatory systems, accidents have become the paradigmatic outcomes of risk; they are at the centre of late twentieth century concerns. That an accident has happened demonstrates that risks have been inadequately managed, and the epidemiological study of these outcomes thus provides a key arena for demonstrating the effectiveness of risk technologies. The accident can no longer be taken for granted, invisible unless missing as it was in the 1930s; it becomes visible as the marker of the success of risk management techniques. A key arena in which the accident has become visible is public health. Targets of reductions in accident rates justify ever more sophisticated techniques of risk assessment, and also, in O'Malley's term, 'privatise' risk management. Managing accidents becomes the concern not of the State or the health service, through the provision of improved trauma treatment or more stringent traffic speed legislation, but the concern primarily of individuals who potentially suffers them. The implications for the victim of a discourse in which the accident should not happen are perhaps even bleaker than those of modernist rationality. Rationality could provide no solace, or opportunities for revenge for such misfortunes, but it implied (at least ideally) no blame either. The victim of the failure of risk management may not be seen as malicious, but they are in a sense culpable, in their ignorance. Installing stair

gates to prevent childhood falls, wearing cycle helmets to reduce the effects of head injuries and studying weather conditions to minimise the risk of mountain accidents may have a negligible effect on whether an injury occurs or not. They do, however, demonstrate perhaps a belief in the possibility of managing risks, and signify responsibility, as a parent, a cyclist or mountain climber. As one book, aimed at educating the parents of small children about preventing accidents, notes, accident prevention is largely about good parenting and:

> As a new Mum you should already be feeling that surge of responsibility that comes with bringing a new life into the world (Smith and Smith 1991: 16)

This might suggest that a discourse of risk is irresistible; that we are all engaged in constant surveillance of our risk environments, and management of those risks through 'talismatic' prevention. To do otherwise would be to marginalise oneself not only as irresponsibly fatalistic, but also as an inadequate parent, or mountain climber. This chapter has also noted, though, that there are limitations to the epidemiological constructions of accidents as outcomes of risk constellations in, for instance, the continuing references to accidents as a marginal nosological category, as well as a central one.

What is perhaps missing from an account of accidents as a product of a discourse of risk, management and prevention is an understanding of how accidents, as misfortunes, are perceived and constructed by individual social actors. These products of risk technologies (advice to parents on children's safety, epidemiological research, political analyses of workers' safety) have been seen so far as having an autonomous existence, divorced from the social interactions which produce them. The following two chapters explore how such interactions contribute to the production of a risk society, but also explore the extent to which the accident is understood as an outcome of risk management in the late twentieth century by those who suffer them. The first arena examined, the coroner's court, is a public one, in which the fatal accidents that are the object of epidemiological

focus, are produced. The second is the more private arena of everyday accidents, which are constructed through interaction between friends, family and colleagues in day to day conversation and action. Through such daily social interaction, accidents come to be suffered, managed and understood and it is at this level that it may be possible to examine the extent to which accidents have been articulated as an outcome of the management of risk.

CHAPTER SIX

THE MEDICO-LEGAL PRODUCTION OF FATAL ACCIDENTS

INTRODUCTION

Epidemiological knowledge about risks for accidents is largely based on examination of fatal accident rates. In 1989, 11,395 of the 576,872 deaths registered in England and Wales were classified as accidental or as the result of adverse effects of accidents (OPCS 1991b). Almost all of these accidental deaths came to be defined as such in the coroner's court. During a coroner's inquest into a death, medical and legal experts, and lay witnesses, negotiate the definitions of accidental death through the process of demarcating it from other, more culpable deaths. The coroner thus plays a key role in the production of knowledge about accidents in contemporary Britain. The study presented in this chapter is based on a case study of one court in an English city. It aims to examine some of the medico-legal processes which produce accidental deaths in order to furnish some clues to the rules by which fatal accidents are constructed in public accounts. This chapter is based on work previously published in *Sociology of Health and Illness,* volume 14 (Green 1992).

Although there has been little written on the social production of accident statistics, there has been considerable interest in the subject of suicide, dating from before Durkheim's classic study (Durkheim 1963), but having a privileged place in sociological work since. Indeed, it has been noted that 'suicide' has become

almost synonymous with 'unnatural death' in sociology (Prior 1989:52). Suicide rates have provided an enduring motif of the success of positivist research, demonstrating law-like regularity and apparent relationships to social variables such as religion, social status or levels of integration, and a fertile ground for debate around the value of such research. Durkheim demonstrated an inverse relationship between the amount of social cohesion within a group and the rate of suicide within that group: a proof for 'scientific' sociology. An apparently unique, individual act was shown to be a 'social fact', observable only through statistics and linked at the social level to other measurable social variables. 'At each moment in its history' claimed Durkheim 'each society has a definite aptitude for suicide' (Durkheim 1963:48). Social cohesion provided a prophylactic device against suicide, evidenced in the lower rates among Catholic and Jewish groups than Protestants (who were perceived as having less religious cohesion), lower rates among married than unmarried men and lower rates in times of economic and political stability. As the study of accident rates has no such history, the work on suicide will be taken as a starting point.

The reliability of official statistics for studying suicide rates has been long recognised as a problem, given the different criteria that are used in different recording systems, and the different moral and legal meanings of suicide that might influence those who record deaths (see, for instance, Adelstein and Mardon, quoted in OPCS 1976:vi). As accident deaths are defined in part by those that are not suicides, this implies similar problems for the reliability of accident mortality rates. There are certainly indications that the reliability of accident morbidity data is widely compromised by systematic biases. Certain kinds of road accidents, for instance, are routinely under-reported. It has been estimated that some 40% of road traffic accidents are never reported to the police and therefore never appear in the statistics. These are likely to include disproportionate numbers of injuries of pedal cyclists (DOT 1983) and pedestrians (Teanby 1992). Other sources of routine accident statistics, such as the Department of Trade and Industry's Home Accident Surveillance System, only record those injuries that are treated in Accident and Emergency departments (DoT 1980), therefore excluding injuries

treated at home or by other parts of the health service. Although mortality statistics are more comprehensive, there are also likely to be biases operating. Prior (1989: 83), for instance, notes that deaths of the elderly are less likely to come to the attention of a coroner's court, and so less likely to be the subject of the investigation which would define them as 'accidental'.

If suicide forms one possible alternative verdict to accident, intentional injuries are another. As the diagnosis of non-accidental injury to children has been more readily made in recent years (NSPCC 1976), there are clearly problems with interpreting trends over time. Given the evidence that non-accidental injuries are identified through a complex process of assessment of social, clinical and environmental clues (see Dingwall et al 1983), rather than any clear criteria about clinical signs, there are unlikely to be consistent rules about the identification of non-accidental deaths in childhood. Similarly, as noted in Chapter Four, the diagnosis of Sudden Infant Death Syndrome, now the major cause of death for infants, was only formally separated out in the mortality statistics from 1971: before then, many were classified as 'accidental suffocation' or as deaths from unknown cause (OPCS 1982). Given that the indicators of these alternatives to accident verdicts are demonstrably unreliable, it can be inferred that there are considerable problems in using accident rates as a basis of knowledge about the incidence of accidents.

Moving on to validity, others have argued that there are also extensive problems in assuming any validity in using statistics as indicators of the rate of suicide, regardless of how 'suicide' is defined. Douglas (1967) claimed that official statistics are not only unreliable but useless for the purpose to which they are put in sociological research, being merely tautological indicators of the subject under study. For instance, 'self-sacrifice' was explicitly excluded from much of the European data, yet there are still attempts to infer rates of altruistic suicide from such data. Douglas also cited the example of an American coroner who would only return a suicide verdict if a note was found, clearly excluding many other kinds of suicide from the local statistics. Official definitions of suicide are,

Douglas argued, constructed from imputed social motivations, which are then inferred from examining the officially defined rates. He took as an example the issue of demonstrating intention, claiming that Durkheim should have recognised the problems:

> Durkheim himself considered imputations of 'intention' to be the most unreliable form of information. Had he simply noted that even the laws specify 'intention' as necessary for a legal categorisation of suicide as the cause of death, he would have realised that *even his own arguments would necessarily lead one to reject the official statistics on suicide as a most unreliable form of information* (Douglas 1967: 186, emphasis in original)

Again, similar arguments could be made by inference about the validity of accident statistics. In an attempt to avoid some of these methodological problems, Douglas advocated a re-examination of Weberian methodology, employed to uncover patternings in the social meaning of suicide. This could be done, he suggested, through the study of such media as suicide notes, allowing an 'empathetic' sociology of suicide which would take the social meanings and motivations of the actors as the subject.

Douglas located the disproportionate interest in suicide in the West's 'moral' problem of whether an individual has the right to take their own life, and the nineteenth century concern with the philosophical problem of free will versus determinism, a debate highlighted distinctly by contrasting psychological studies of suicide as an individual act with sociological (or 'moral statistical') studies of suicide rates. In contrast, Atkinson, more recently, has characterised this interest as 'fascination at a distance' (Atkinson 1978:9), claiming that the interest has not been in suicide as such but in demonstrating social laws. Atkinson followed Douglas' criticisms of the positivist tradition a certain distance, agreeing that the social facts used to 'explain' suicide rates can equally adequately explain different registration rates, but his research question was a very different one. Rather than

being interested in suicide *per se* his aim was to explain how some deaths get characterised as suicides. The answer: 'deaths get categorised as suicides in much the same way as anything else gets characterised' (Atkinson 1978:196), was, he admitted, somewhat disappointing, but his focus on the processes by which officials come to define a death as a suicide is a useful departure. Coroners, and their officials, who may have a key role in selectively forwarding evidence and opinions to the coroner, were identified as key actors in this process. Their role was identified as particularly important as there was found to be no 'official' definition in the guidelines for coroners of what a suicide was. However, even where rules about proper procedure existed, coroners did not necessarily follow them. Atkinson quoted as evidence of a coroner working without reference to the rules a case in which a jury was sent out to decide between verdicts of 'accident' or 'misadventure': classifications which were no longer distinguished in the official returns (Atkinson 1978:91). Deaths became labelled as suicides through the interaction of medical and legal professionals, following what Atkinson called 'cues' to a case of suicide. Such 'cues' included notes, threats, mental state and the mode of death. A hanging, for instance, might less equivocally be taken as a suicide than a road traffic accident or a drowning, where other cues, such as the discovery of a pile of clothes on a river bank, would be needed. Given the wide reporting of coroners' decisions, particularly in the local press and the fact that they rely on common sense rather than professional views, Atkinson claimed that 'the role of coroners in maintaining and sometimes changing shared definitions of suicidal situations attains a crucial importance' (Atkinson 1978:145).

This comment, and indeed much of Atkinson's study, might well apply to accidents as well as suicides, and his question will be taken as a departure for this study of the coroner's role in the categorisation of fatal accidents; the focus being on 'how do certain deaths come to be classified as accidental?'. His contention that the focus on suicide has been coincidental cannot, though, be so easily accepted. A study of how accidents come to be defined may provide some clues to the continued interest in suicide and the neglect of accidents as a legitimate area of sociological study until relatively recently.

THE CORONER'S COURT - AN INQUISITION

To understand the coroner's role in classifying some deaths as accidental, a brief account of the history of the coroner's court might be useful. The Office of Coroner is one of the oldest known in the English legal system, dating back to the ninth century and formally established by the Articles of Eyre in 1194 (Jervis 1986). The primary duty of the early coroner was 'keeper of the pleas for the Crown': the office was established to protect the financial interests of the Crown in criminal proceedings at a time when the Crown needed to raise revenue to finance war. The investigation of homicides and suspicious deaths (including those that we might now define as 'accidental') was an early duty, as such events would enable various taxes to be levied on the community where the body was found. Potentially there were also fines for non-appearance at various courts and deodand payments where material objects were the cause of a fatality (see Hunnisett 1961, 1985). The coroner's office was not salaried until 1836 and, given their role in raising what must have often have been seen as arbitrary and onerous taxes, it was not a well respected one for much of its history (Forbes 1985). Elements of these early fiscal duties survive in the coroner's continuing responsibility for Treasure Trove - deciding whether buried gold and silver found within their area of jurisdiction belongs to the Crown or has been deliberately hidden. The modern coroner has a medical role in terms of the registration of causes of death as well as a legal one, and since 1839 coroners have been qualified in the law or medicine, or occasionally both. The introduction of medicine into this area of the law was not a smooth one (see Forbes 1985), as Eliot's Mr Vincey's comment in Middlemarch, first published in 1871, suggests: 'Yes, yes, give me a coroner who is a good coursing man...And in my opinion you're safest with a lawyer. Nobody can know everything. Most things are 'Visitations of God'. And as to poisoning, why, what you want to know is the law' (Eliot 1965:187).

The function of most English civil and criminal courts is attribution of blame, be it 'guilt beyond any reasonable doubt' in a criminal court, or the apportioning of liability in civil proceedings. On the basis of these decisions punishments are ordered for the guilty and perhaps compensation for the wronged. Such courts are described as 'accusatorial' or 'adversarial' in that decisions are made on the relative validity awarded to two or more versions of the truth. Evidence and witnesses are presented not as neutral carriers of facts or truth but are employed for defence or prosecution, with the Judge acting, as Atiyah (1983) puts it, as 'umpire'. Atiyah describes the function of the trial process thus:

> almost always based on an 'accusatorial' rather than an 'inquisitorial' procedure...the English trial is designed to resolve a dispute between two contesting parties rather than to conduct an investigation, or even to ascertain the truth (Atiyah 1983:44)

In contrast, the formal function of the coroner's court is inquisitorial: it is summoned specifically to find out the truth. Nearly one in five deaths (OPCS 1990) is currently reported to the coroner when the attendant doctor is unable to sign the death certificate, because the illness was unexpected, because of suspicious or 'unnatural' circumstances or industrial disease (Kavanagh 1985). At this stage the coroner can decide that the death was a natural one and then send the death certificate to the Registrar without further investigation. If further forensic detail is needed the coroner can order a post mortem to establish the medical cause of death. If satisfied after the post mortem that the death was natural, the certificate is then sent to the Registrar. If not, the coroner orders an inquest into the death (Kavanagh 1985). Inquests are held into about one in four deaths referred to the coroner (OPCS 1990); the other three quarters of the coroner's work is defined as 'routine' (Broderick 1971) and is seen to be purely serving the reliable record keeping of the State: in some circumstances 'it is desirable in the interests of accurate certification of the cause of death, that the death should be certified after autopsy' (Broderick 1971 xiii). The emerging

sophistication of medical classification for causes of death required far more than Mr Vincey's 'Visitations from God' as a categorisation.

Accidents are found to be the most common cause of deaths which are not 'natural'. An initial problem in identifying these kinds of death of which accidents are a subset is that the definition of 'natural' is clearly contentious. Indeed it is recognised as ambiguous by official guidelines. The current edition of Jervis on the Office and Duties of Coroners notes that it is:

> impossible to give definitive legal guidance on the meaning of the word 'unnatural' as it appears in current legislation (Jervis 1986:62)

and the Broderick Committee report noted that the distinction rests on individual judgement, current socio-medical knowledge and 'the circumstances in which the death occurred' (Broderick 1971:52) as much as on the actual condition causing death. The process by which certain conditions and circumstances come to be regarded as 'natural' and others as 'unnatural' is a fertile area for sociological enquiry but outside the scope of this study: see Prior (1989:50-64) for an analysis of the notion of 'unnatural death' in the context of deaths which are referred to coroners.

Various facts have to be ascertained and recorded by the coroner, and the court process is designed to facilitate the discovery of those facts. Rule 36 of the Coroner's Rules states:

> 1. The proceedings and evidence at an inquest shall be directed solely to ascertaining the following matters, namely
>
> a) who the deceased was
>
> b) how, when and where the deceased came to his death
>
> c) the particulars for the time being required by the Registration Acts to be registered concerning the death

2. Neither the Coroner nor the jury shall express any opinion on any other matters (Kavanagh 1985)

Despite what here seems to be a direct prohibition on any functions other than fact-finding for the State's record keepers, there are other statutory functions which authorise the coroner to make reports to various persons and authorities, for instance for the purpose of avoiding future fatalities. The verdicts now open to a coroner are suggested as: natural causes, industrial disease, dependence on drugs, non-dependent abuse of drugs, want of attention at birth, killed himself [while the balance of his mind was disturbed], attempted/self induced abortion, accident/misadventure, sentence of death, lawful killing, open verdict, unlawful killing or stillbirth (Kavanagh 1985). Until the Criminal Law Act 1977 the coroner could commit for trial anyone found to have caused death through murder, manslaughter or infanticide. These verdicts are now replaced with 'unlawful killing' and the coroner has lost all criminal jurisdiction: no person may be named in a verdict as being criminally responsible, and papers for deaths for which criminal culpability is suspected must be sent to the Director of Public Prosecutions.

Various procedural details highlight the coroner's court's inquisitorial function in contrast to the blame apportioning of other courts. One is the admission of hearsay evidence, described by Smith as 'important, since it is such evidence which features in everyday discourse' (Smith 1989: 88). Truth has to be established not just for the purposes of the State, but also for the witnesses and participants in the court. Lay experts are also heard, as well as professional expert witnesses such as the pathologist. Experts are not brought on for one counsel or another but as 'neutral' providers of scientific evidence. The coroners themselves perform most of the interrogation, rather than acting as umpires, and they may invite relatives to question witnesses. Professional counsel are not common in coroner's courts, and may be neither welcomed (Smith 1989) nor happy there (Atiyah 1983). It is in many ways a lay court.

The Broderick Committee identified five public interest functions served by inquests. These were:

1. To determine the medical cause of death;
2. To allay rumours and suspicion;
3. To draw attention to circumstances which if unremedied might lead to further deaths;
4. To advance medical knowledge;
5. To preserve the legal interests of relatives, heirs and other properly interested parties.

The first was seen by the Committee in some respects as the primary function: 'it should be the principal aim of any system of death certification to ensure that the cause of death is accurately ascertained in every case' (Broderick 1971:161). Rates of accidents, like those of other causes of death, rely on the 'accuracy' of the coroner's decision for their reliability. The Broderick Committee made several recommendations that the remaining moral functions of the coroner be abolished, such as the duty to name a person responsible for a homicide and commit them for trial, and that the term 'verdict' should be abolished in favour of the more neutral 'findings'. This suggests that the Committee were well aware of the conflicts that might arise between the objective fact-finding functions and the moral ones, seen by the Committee as anachronistic leftovers of an earlier time when the coroner was more central to the English judicial system. They noted that 'one of the original purposes of the inquest was to determine whether a death had resulted from a criminal act' (Broderick 1971:188) and recommended that as no interest was served in this continuing purpose that inquests should move 'away from attribution of blame and towards a merely fact-finding inquiry' (Broderick 1971:190). Significantly, although the recommendation to abolish the duty to name a person responsible for homicide was taken up, others, such as the suggestion to abandon the term 'verdict', were not and the tension between fact-finding and moral enquiry remains.

Past editions of Jervis on the Office and Duties of Coroners, which provides advice for coroners (Jervis 1887, 1927, 1957) certainly do not emphasise 'fact-finding' as the primary function of the coroner's court. This is clearly implied as being the separation of blameworthy from morally neutral acts. The 1927 edition offered the following guidance for juries (which still had to be called for all inquiries into deaths at that time):

> after hearing the evidence the jury shall give their verdict...who the deceased was, and how, when and where the deceased came by his death, and if he came by his death by murder or manslaughter, the persons, if any, whom the jury find to have been guilty of such a murder or manslaughter, or of being accessories before the fact to such murder (Jervis 1927:59)

Identification of facts was here still a precursor to the real business of the court: that of identifying criminal acts. Discussion of accident or misadventure only arises in these editions in terms of what to record if the death was not from 'natural' causes but no crime was committed. The 1887 edition contains no index entry for 'accident'. Accidents were mentioned only in passing as the unfortunate but unforeseen results of lawful acts, as the following extract, which appears in both the 1887 and 1927 editions, illustrates:

> When an unlawful act occurs by misfortune or chance, and not by design, the will observes a total neutrality, and does not co-operate with the deed; which therefore wants one main ingredient of crime ... if any accidental mischief happens to follow from the performance of a lawful act the party stands excused of all guilt; but if a man be doing anything unlawful, and a consequence ensue which he did not foresee or intend, as the death of a man or the like, his want of foresight is no excuse (Jervis 1927:178)

The crucial distinction made was not between the accidental and non-accidental but between lawful and unlawful acts. By 1957, after the first official guidelines for coroners (the Coroners Rules) were established in 1953, the edition of Jervis noted in passing the difficulty in defining 'accident' (Jervis 1957:87) in terms of drawing a distinction between accident and misadventure. However, the only discussion of accidents referred to those that happen in situations where a jury still had to be called: those occurring in mines, quarries, factories or prisons, on railways, or caused by a motor vehicle. There was no discussion about how to decide on a verdict of 'accidental death', only the assumption that this will be used when no criminal verdict can be proved and the death was not held to be natural.

It is hard to see the current moral functions of the coroner's court, which are regretted by the Broderick Committee's report, as merely incomplete historical process. The language employed during an inquest is inherently moral, the findings based not on constructed scientific 'truth' but on amelioration and moral evaluations. Smith (1989) has described how a post mortem contrasts ideals of objective science with description as an art born of training and experience, and how opinion and fact in a court are in reality inseparable, although science provides an authority for the objectivity of 'facts'. This is clearly true, but does not adequately describe the position of expert evidence in the coroner's court. It is not that the coroner does not accept for fact what we hold to be constructed from various interests; but, rather, that such 'facts' are deliberately employed to provide a truth which suffices both for the statistical gaze of the State and also for the participants. Meaning has to be provided for a death, and the coroner has an active role in doing this for deaths which are most in need of one: the 'suspicious' or 'unnatural' deaths.

In these earlier editions of Jervis (Jervis 1888, 1927, 1957) there are two notions that emerge as essential to the making of the distinction between lawful and unlawful deaths. The first of these is the concept of responsibility. There are certain groups of people not held to be responsible for their actions, and therefore not culpable of acts which are themselves unlawful. Children are one such group.

Below the age of seven they could not be held responsible for homicide or suicide, and between the ages of seven and fourteen their knowledge of right and wrong had to be demonstrated before they could be held responsible.

The other major group that are absolved from responsibility for their actions are lunatics, a category that emerged, according to Smith (Smith 1981), in the nineteenth century from an interaction between medical and legal discourse. There was some debate about how to demonstrate that someone causing a death from an unlawful act was not responsible for their actions at the time, but in all these editions of Jervis the principle that there are those that cannot be held morally accountable is firmly established, if there was some concern that the principle was being abused by over-lenient juries:

> (if) a lunatic during his frenzy destroy himself, he cannot be felo de se.[1] But this excuse ought not to be strained to that length to which coroners' juries have sometimes been apt to carry it (Jervis 1927:189)

Conversely, there are others who were seen to have a specific responsibility to carry out acts which might be unlawful within other relationships:

> Parents, masters and other persons having authority in foro domestico may give reasonable correction to those under their care; and if death ensue from such correction, it will be no more than accidental death (Jervis 1927:213)

There is, in contrast, no discussion about the other notion that seems essential to the identification of unlawful deaths, that of the 'accidental'. Even in the latest edition of Jervis (Jervis 1986), published after the abolition of criminal jurisdiction

[1] 'Felo de se' (a felon unto himself) was abolished as a category of suicide in 1936, although suicide remained a crime until 1961. 'While the balance of his/her mind was disturbed' survives as an optional rider to the verdict of 'killed himself'.

of coroners, there is no definition of what an accident is, only a note on why accident and misadventure are no longer distinguished on official returns, which reflects common-sense usage of the terms:

> it is sometimes suggested that accident connotes something over which there is no human control, while misadventure indicates some deliberate (but lawful) human act which has unexpectedly taken a turn that leads to death (Jervis 1986:194).

Accidents are otherwise discussed only in terms of 'notifiable accidents and diseases'; those fatalities happening in specified circumstances or places (such as factories, railways, in the presence of ionising radiation) when there are additional duties on the coroner to report them to specified authorities. Although, as Atkinson points out, there is no 'official' definition of suicide to be found in Jervis there is considerable discussion on the verdict of suicide, particularly in the editions dating from when suicides were still divided into felo de se (for which the victim was held responsible) and while insane. Accidents do not even receive this attention, either in these editions of Jervis, or in any other official writing on the duties of coroners. The definition of an accident, it seems, is self-evident and requires no elaboration. To examine how deaths come to be defined as accidental it is necessary, then, to look at the process in practice.

METHOD

The following material is taken from observations and interviews with three coroners at one English city coroner's court. The court was observed over a four month period, and the examples presented are from seventeen inquests seen in full and discussed with the coroner. Extensive notes were taken throughout the inquests and discussions. Indented passages are direct quotes, as inquisition in

open court proceeds at a rate that allows near verbatim recording, and other quotes are taken from notes made at the time. Demographic, geographical and diagnostic details have been changed where necessary to protect anonymity. As the Broderick Report noted, there is considerable variation in the proportions of different verdicts returned by coroners in different areas, and it is not claimed that this court is in any way representative of this range. The area served by the court studied reported a higher proportion of deaths due to injury and poisoning than that the average for the country in 1989 (4.2% of total deaths compared to 3% for England as a whole) and significantly fewer of these were recorded as accidents (52%, compared to 66% for the country as a whole) (OPCS 1991b). These differences may reflect characteristics of the local population, but as the work reviewed above on suicide suggests, any study of regional differences in reported accident rates compared to other forms of 'unnatural death' will be subject to considerable problems of reliability and validity. It is of course possible that differences between the court studied and others in England may well be the result of local cultural norms which constrain or make possible kinds of decision making behaviour unlike that in other courts, or that they are the outcome of personal characteristics of the coroners who sat here. However, the intention of this case study was to delineate some of the rules that are used to classify fatalities as accidental rather than to attempt a study of the reliability of such recording, or to depict a 'typical' coroner.

HOW DEATHS BECOME CATEGORISED AS 'ACCIDENTAL'

One morning, the coroner was one I hadn't seen before who had apparently not been told I was visiting the court. Requesting permission to observe that morning, I explained I was interested in accidental death. He replied that there weren't going to be any accidents that morning. I asked about the man who had fallen beneath a train, whether that was an accident. 'Ah', he said, 'that's the six million dollar question'.

The case involved an elderly man with an advanced life-threatening disease, who had fallen beneath a train entering a deserted station. The inquest into the man's death was held with a jury, who had already heard the cases of four people who had died of lung diseases that were potentially industrial diseases, and were about to hear this case involving a railway. The coroner introduced the jury to the court:

> The cases we are now going to hear require by law a jury...this is an inquisitorial court: you have to decide who the deceased was, and how they came to their deaths... (Notes 4.4)

The jury's decision on the man who had been killed by the train was one of accidental death. There were, though, several what Atkinson would call 'cues' to a verdict of suicide. In answer to a question from the family of the deceased, the pathologist claimed the deceased had 'only a matter of a few weeks to live' on the day of his death. The train driver's testimony clearly indicated his belief that the man had killed himself:

> He crouched, stepped up, crouched again and appeared to jump...I had a similar incident about a year ago. As far as I am concerned he jumped. (Notes 4:8)

The time of day was a quiet one, so there were no other witnesses to the incident. A review of the man's medical records, together with the post-mortem finding of advanced disease confirmed the terminal state of the illness. All these might indicate a suicide, but the coroner's directions to the jury are a direct warning not to follow carelessly such cues:

> We have to have positive evidence to give such a verdict. He hasn't spoken to anyone about wanting to die. Was this an accident? Did he fall? Or was he toying with the idea? Did he just slip? There was no one there to see - we only have what the driver

> said. If you feel he was actively [stressed] intending to kill himself you have to decide 'he killed himself' otherwise you have to decide this was an accidental death (Notes 4.8)

In a philosophical sense, there are several causes of this man's death. A primary one could be the advanced disease, which was, according to medical expert evidence, to take this man's life in a matter of weeks. The cause of death recorded by the coroner on the certificate were the multiple injuries reported by the pathologist: fractures to the spine and severe abdominal and chest injuries. There were also the actions he might or might not have taken to hasten his death: actively jumping in front of a train, or slipping from the platform. The decision that the man died accidentally was taken, essentially, because there was no absolute proof that the deceased had intended to take his own life. That there was no absolute proof that the man had accidentally fallen was a fact of less significance. There is no burden, this suggests, to prove the accidental: accidents are here seen to be what happen when other verdicts cannot be safely given.

Another example demonstrates this lesser burden, here between an open verdict and the accidental. Before the court sat, the coroner mentioned to me 'I never make up my mind before the case about what questions to ask... I prefer to have it fresh, and make up mind then' (Notes 1.10) One of the cases to be heard concerned the death of a small girl, who had fallen from a second floor window. Before the inquest, the coroner reviewed the evidence that would be requested with one of his officers. He asks the following questions: 'Clean flat was it? Mother upset? Not known to the police?' (Notes 1.10). He adds, to me: 'They've been thoroughly checked - no child abuse, the flat's a bit sparsely furnished, but clean'.

During the inquest, the concern was first to establish that there was no foul play. It transpired that the girl and her older sister were playing alone in their second floor bedroom, with the parents in another room in the house. A neighbour was called to testify that she had previously seen the children playing on the window

sill, and had informed the mother, as she considered it a dangerous situation. The father testified that he had asked the council in the past to fit proper locks to the windows, but that this hadn't been done. The pathologist was called to give evidence of the multiple injuries of which the girl died after being taken to the hospital. The coroner gave these as the cause of death and 'accidental death' as the verdict. After the inquest the coroner mentioned that he could have questioned the father about why he had not fitted a lock himself, but that he felt that this would unnecessarily have added to the families distress and everyone with children has been in the situation where a safety precaution hadn't been taken - thankfully, usually with no such tragic consequences. Throughout the inquest comment was made and requested about the parent's status as 'good' parents: the pathologist noted that the body was that of 'a well nourished, healthy girl, large for her age' (Notes 1.1), it is noted in court that the children were not on the abuse register, and that the flat was clean and tidy.

The verdict returned, accidental death, was clearly the only appropriate and humane verdict. However, it might be useful to unpack the reasons why it was selected against other logically, if not morally, possible choices. After the inquest the coroner did explore an alternative possibility, claiming that 'objectively, it could have been an open verdict' (Notes 1.10) given that there was no absolute proof that the sister had not pushed the girl from the window. However, an open verdict would leave a shadow over the family and particularly the sister, and after so much trauma, he felt it unfair that the family should be further punished in this way. He then notes that both his decision not to mention the fact that the father could have himself fitted a lock, and his verdict, may have been different 'if the family had been on the abuse register, or the flat had been messy, or the children looked uncared for' (notes 1.10).

Moral culpability clearly lies not only in the act, but also in the person. A verdict of 'accidental death' is here a public affirmation of good parenting as well as a decision about the moral content of the fatality; a neutral category that absolves the family of the deceased from moral blame. In the first case, the family were

spared the death being labelled as 'suicide' (still considered, despite the abolition of felo de se, as blameworthy) as there was no definitive proof that there was an intention. In this case the family were spared an ambiguous moral category as their status as 'good parents' had adequately been demonstrated. The occurrence of an accident needs no proof; it requires merely the absence of any moral censure.

There is no such event as a pure accident. The following case was described by the coroner, before the inquest, as 'purely a tragic accident' (Notes 1.4) but the inquest that followed still interrogated various actors and witnesses to ensure that no morally culpable acts had occurred.[2] A man, with mental disability, had, unknown to staff, left a local hospital and wandered onto a busy road in front of fast moving traffic. He had bounced off one car, and then been run over by another. There was no doubt expressed by any witnesses or police officers or the coroner that the man had wandered, apparently with no control, into the road and that traffic moving within the legal speed limit would not have been able to stop in time. However, the drivers of the cars involved were asked about the speed at which they were travelling, their state of mind and concentration, the road worthiness of the cars (both were examined in detail by the police and the results reported to the court) and the lighting on the road (to exclude any contributory culpability on the part of local authorities). Skid marks were examined to furnish proof of speed, and witnesses were asked about the care being exercised by the drivers involved. There was no evidence of any careless driving, or that the cars were unsafe to drive. Only after this had been established was the verdict of accidental death given. Again, the event could only be categorised as an accident if no culpability could be demonstrated. The event itself, despite being described

[2] Had a criminal act such as a Road Traffic Accident in Section 1 category (causing death by dangerous driving) been committed, the inquest would have been stopped and the papers sent to the Director of Public Prosecutions.

as 'purely a tragic accident' could not be formally recorded as such until the blamelessness of all the participants had been fully and publicly established.[3]

Given that the verdict of accidental death is given as a sign that a death is not another kind of death, rather than a sign that some essentially accidental act has occurred, it is rare for the coroner to provide much overt explanation about how the decision was made. The following case is an exception and shows how 'accident' can be used as a public affirmation of blamelessness.

A middle aged man had had an operation earlier in the year, resulting in a colostomy. Problems had developed and after a series of operations the man died in hospital. Detailed medical evidence was given by surgeons from the hospital and the pathologist who had carried out the post-mortem. The coroner in his summing up presented a consensus view that a number of factors together had contributed to the post-operative death of the patient: a pre-existing heart complaint, the risks of major abdominal surgery, where extensive exposure of the bed of the bowel can 'use up' the blood's clotting factors and cause post-operative haemorrhage, and the original obstruction of a badly attached section of colon. In delivering the verdict and decision as to cause of death the coroner takes some trouble to absolve the hospital of any blame:

> the problems relate to long, free moving loops [of intestine]. Can't leave the man obstructed - there is no criticism of doing the operation, or the way it was performed. The pathologist has explained that there are things we cannot control and the things we can't control are insults to the body. A man develops a perforation ... his general condition is poor, everything that could be done is done - there is nothing whatsoever to indicate that there is anything not done correctly. We used to use 'misadventure' for this type of

[3] It is technically possible, however, for the coroner's court to record 'accidental death' and then for the police to prosecute for an offence committed and brought to light during the inquest, but not responsible for the death. I saw no instances of this.

> event. Sometimes things that happen, that nobody had any control over, they follow their natural course - but who wouldn't embark on the adventure? This was essentially an adventure that had gone wrong. Approximately two years ago Lord Justice Mann said 'the word misadventure should be given its quietus, there is no difference between misadventure and accidental death'. In this case I will record: Cause of death, 1a Post operative haemorrhage, 1b perforation of the small bowel and I will record that it was an accidental death. There is no complaint whatsoever regarding the hospital.(Notes 3.8)

The summing up is an opportunity to exonerate publicly any blame that may have attached to the surgeons or the hospital, and the inquest fulfilled the second function described by the Broderick Report, that of allaying suspicion. It is also an opportunity here to elaborate on 'misadventure' as a particular type of accident, although the distinction is no longer made in the official returns.

For the coroner's court to be unconcerned about matters of guilt and innocence, that is, not to be 'accusatorial', clearly involves some conflict when the very verdicts available carry such loaded moral meanings. The category of 'accident' emerges from the gaps left by other verdicts, and is produced by a moral interrogation of acts and actors. Despite being in itself a morally neutral category it is surrounded by the language of culpability and responsibility and can only be invoked when no such culpability has been proven. Arising in this way, the label of 'accidental' points to the possibilities of responsibility for a death. There can be no essential 'blameless' death as the very act of categorising a death as accidental incites moral debate and the public rehearsal of individual responsibilities.

An alternative classification if there is no evidence at all of morally culpable activity and no 'external' cause of death is 'natural causes'. The case of a middle aged man, suffering from diabetes and pancreatitis, found dead at home illustrates

this. Although the pathologist had found a small trace of phenobarbitone in the blood post mortem, and the wife admitted that they had had some disagreements that might have led to his feeling depressed, it became clear as the inquest progressed that no intention or moral culpability was implicated. The coroner, when asking the man's wife about her role in his insulin regime, confirms that her behaviour was beyond any moral questioning:

> **Coroner** Some people are forgetful, a bit neglectful - but was he in that category?
> **Witness** He'd forget it, take it, forget it... I don't think he realised the seriousness of it.
> **Coroner** As a dutiful wife, you'd realise he wasn't taking it properly and you'd persuade him?
> **Witness** I'd try, yes. (Notes 3.7)

The cause of death given was (1a) hyperglycaemia (1b) diabetes mellitus and the verdict 'natural causes'. The coroner, in his summing up, added that the man's wife:

> should not have any guilt - there was nothing to suggest he was seriously ill, and nothing to suggest that he'd taken an overdose... (Notes 3.7)

Since there was no question of the man having killed himself, the death could not have been accidental. The absence of any possibility of a 'moral' verdict seems more significant than the lack of any external cause, as the trace of barbiturate could have corroborated any 'cues' to a verdict of suicide, or an open verdict.

In comparison, the coroner claims of another case, resulting from a similar sequence of clinical events to this last one, that 'it would be wrong to give natural causes because of the chain of pathological causes'. In this case, a fit elderly man who had a hernia for 30 years without medical treatment had been knocked

slightly by a car while running across the road from a shop. Although not obviously injured at the time, a swelling developed and he attended casualty and was admitted a month later. After an operation to drain a hydrocele, the man's problems increased, and he developed a temperature, atrial fibrillation, and eventually a generalised infection of the blood stream. His condition in hospital deteriorated and he died after suffering from a stroke, failing kidneys and bronchial pneumonia. Although the cause of death was given as (1a) bronchial pneumonia (1b) hernia repair, and a police officer called as witness agreed that there was no responsibility for reporting the original road accident as 'no injury had occurred' the verdict given was accidental death. The chain of physiological events was seen to result from a potentially culpable act (that of the car driver). To record this death as 'accidental' rather than 'natural' denotes, perhaps, the possibility of responsibility.

The coroner's function of neutral fact-finding does not always fit easily with this function of moral amelioration. The conflict is perhaps most evident with the questioning of pathologists who present post mortem findings as expert witnesses to the court. Their legitimacy as neutral truth-tellers is established through scientific authority (see Smith 1989), although coroners may disregard their conclusions when 'science' does not fit with social needs. After the inquest into the death of a man who had died after a head injury, the coroner remarked that she'd wanted to:

> ...ask the pathologist one, if he'd suffered and two, if he'd have had more chance if they'd taken him [to the hospital] last night, but I thought we might get the wrong answer (Notes 2.10)

The coroner wanted to reassure the relatives that first, the man would have felt no pain and secondly that their delay in taking him to hospital, thinking he was merely sleeping off the effects of alcohol, was not a significant factor in the man's death. The issue was not that this might not have been 'true', but that the

pathologist might feel it necessary to couch his answer in medical 'probabilities' rather than the certainties that would help the family. The pathologist is often appealed to for a statement to ease the family's distress, for instance to assure them that the deceased would have felt no pain, or would have died instantly, but only the ones experienced in presenting 'facts' to the court are to be trusted to do this: there is considerable 'backstage' comment on the reliability of various pathologists for this.

DISCUSSION

The decisions made at the court studied may not be representative of other courts and it is clearly not possible to generalize from one small case study rules that might operate more widely. The ways in which these coroners delineate accidents from other deaths does, though, provide some clues about how we use notions of the accidental in common-sense classifications of misfortune, and some tentative conclusions about the likely parameters of such decision making are possible.

The coroner clearly has a delicate task in fulfilling functions that can be in conflict. There is a need to provide facts for the State which are seen to be objective and neutral, and, at the same time, to act as moral arbiter: a contradiction brought out in the contrast between the Broderick Committee's recommendations and the official duties as described in The Coroner's Rules. Individual coroners may differ in how overtly they fulfil the latter function, and to what extent they see their role as protector of the public or of the deceased family. One coroner clearly saw his duty as a social one, in terms of its public service function:

> How else would society find out? If a child dies because of a harness in a car, it comes to this court and we discover the harness was dangerous! (Notes 6:3)

and in terms of providing meaning and solace for the bereaved:

> It is catharsis coming to court. Its an official stamp, a final display of what happened..it helps them come to terms with their role and come to terms with misplaced conscience (Notes 6:4)

An extreme example of a coroner acting in this way is provided by Matthews (Matthews 1988), suggesting the coroner quoted above is not unique. He reports an instance of a coroner who, before returning a verdict, asked the bereaved family which verdict they would prefer.

It is not, then, surprising that there is a large space for the interplay of commonsense and 'official' definitions of the accidental, for it would be impossible for any purely bureaucratic classification system to operate. In a society that has been said to cope poorly with death (see for instance Elias 1985), and perhaps particularly poorly with deaths for which no human or divine cause can be found (the 'accidents') the coroner's court provides one of the few arenas for the production of meaning. Such meaning was seen here to emerge from a moral interrogation of the 'facts' which produces a classification of fatal misfortunes that resonates with what could be described as a 'lay' classification of accidents: that they are unexpected, unwilled and for which no-one was to blame. Crucially, though, it emerged that there was no discrete category of accidental death. Such deaths are produced in the gaps left by other categories in the classification system, which had clearer definitions. Despite the lack of clear criteria for defining a suicide noted by Atkinson, there are still criteria which have to be fulfilled; however local and arbitrary they are, such as proof of motivation. Accidents are more negatively defined: they are what is left when all other deaths have been accounted for. The grounds of eligibility are purely negative; there

must be no motivation, no culpability, no legal responsibility uncovered. The Open verdict, which is an overt attribution of uncertainty over the attribution of blame, signals the possibility of such culpability. Accidents appear to publicly negate implications of responsibility for the fatality, on the part of the deceased or any other actor. Such negations are, clearly, the subject of negotiation, and the coroner's verdict may be merely a one point in this process, as the media attention which sometimes surrounds coroner's verdicts of 'accidental death' in controversial cases indicates (see for example Bergman 1991). Media reports of coroners' accident verdicts are presumably 'newsworthy' largely because of the room left for contestation, and reports often include comments by relatives or friends of the deceased who disagree with the verdict given. Thus, after an inquest jury found that his son had died 'accidentally' when hit by a police car during a high speed chase, a father is reported as saying '[the] police and the jury should be ashamed of themselves. We will pursue it' (Myers 1994). Similarly, the mother of a patient who died after being given an injection of Sparine in Broadmoor, is reported as being 'very disappointed' with the accident verdict given (Guardian 26th October 1991). Occasionally, relatives may gain leave to appeal to the High Court to overturn coroners' accident verdicts, as did six relatives of those who died in the Hillsborough football stadium disaster (Guardian 3rd November 1993). Far more commonly, though, the coroner's verdict of 'accident' is recorded unchallenged, at least in the public arena.

These examples illustrate that the coroner's decision is not necessarily the end of point of debate around whether a death was accidental or not. They also suggest, perhaps, that there can be no end point to such a debate, no 'final' verdict, on an accidental death. As accidents emerge from the gaps left by other verdicts, their assignation is in a sense always provisional; pending potentially endless moral enquiry.

Atkinson's contention that the focus on suicide has been 'accidental' may not represent a complete answer to the neglect of 'accidental' deaths in sociology. As has been suggested, such deaths by their nature do not provide promising material

for a positivist enquiry, imputed as being the result not of willed human action but of uncertain and irrational cause. An empiricist study of the regularities and correlations of accidental death is thus problematic, since they form a marginal category, produced from what is left after other, more patterned deaths are accounted for. The kind of enquiry proposed by Douglas would be equally problematic in the field of accidental death, given its victims have no motivation by definition. Perhaps more significantly, accidental deaths do not form a discrete group, as do deaths from suicide, or even homicide, or from particular diseases. They are connected merely by what they are not, rather than by any affinity, be it a theoretical or common sense one. In this light, it is perhaps unsurprising that the moral functions of the coroner's court, so regretted by the Broderick Committee, persist. It is precisely those functions which produce fatal accidents.

Although the 'ideal' accident is an event that no one can be blamed for, the coroner's court is an arena of public truth telling and record keeping within which moral decisions are made. The random peripheral stuff of accident is not an answer to moral culpability, but the very raw material from which culpability is constructed. The fatal accident is a paradox, as it is both a meaningless chance event which does not demand explanation, and a traumatic life event that does. It is, therefore, is situated in a morally loaded space over which society can publicly affirm and negotiate the culpable. It appears that there is no such thing as a 'pure' accident: deaths can only be classified as accidental after moral scrutiny of the social circumstances of the event excludes responsibility.

CHAPTER SEVEN

THE SOCIAL CONSTRUCTION OF ACCIDENTS

INTRODUCTION

The coroner's court produces fatal accidents through a moral interrogation of the circumstances surrounding a death and, in doing so, contributes to a classification of misfortune which categories the remnants as 'accidents'. Although the coroner's court is a key agency in the contemporary production of knowledge about risk and its management (through its role in producing fatal accident rates), it also serves as an arena in which accidents are understood as personal misfortunes. These two kinds of knowledge about accidents, that of aggregated statistics and risk and that of subjective experience, were seen as opposed in the literature on accident prevention in the second half of the twentieth century. This literature suggested that there are two distinct discourses about accidents. The first is a lay one which holds them to be random misfortunes for which no one can be blamed or held responsible. If something was caused deliberately to happen, it was not an accident. If a unique event was accurately predicted through causal logic it could not have been an accident. These are the accidents experienced by individuals as 'bad luck'.

However, if the cause of an individual accident cannot be attributed, we can map the epidemiology of that kind of accident in general. The epidemiological mapping of accidents constitutes a self-consciously professional discourse, one rooted in the explanatory frameworks of what has loosely been characterised as 'high modernity' or more specifically as the 'risk society'. The last chapter

suggested that fatal accidents are constructed from a moral enquiry into the event, and that accidents were still constructed as left-overs of our explanatory systems. The aim of this chapter is to examine how these discourses are manifested in 'everyday' talk about accidents which concerns the trivial happenings which are described as accidental as well as the tragic fatalities that are classified in this way. There are two questions which prompt this exploration. First, how far do the discourses produced in accident prevention literature shape how accidents are constructed in everyday life? Second, are the rules by which fatal accidents are categorised in the coroner's court similar to the ones used to categorise everyday accidents?

METHOD

The data used to explore contemporary ideas about accidents are from transcriptions of seven interviews and two focus groups [1], which included a total of twenty four people; twelve adults and twelve children. The interviews were largely unstructured, apart from an prompts asking interviewees to define an accident, to recall their last accident and to suggest how accidents can be prevented. All but one of the interviews were audiotaped, and analysis was based on the audiotape transcripts.

As well as providing qualitative data used in the following analysis, some of the interviewees also acted as 'expert witnesses' in this study, contributing to the development of the thesis. The home accident clerks, for instance, showed me the forms they used for collecting data and outlined the Home Accident Surveillance System's classification of home accidents. Others passed on references about accidents or suggestions of books to read.

[1] These were not strictly focus groups in the market research sense (see, for instance, Basch 1987); the term is used to describe a facilitated discussion with more than three participants.

Some of the interviewees were initially chosen for their expertise on some aspect of accidents. 'Expertise' was defined as any specialised body of knowledge that might contribute to a public discourse on accidents. This was not necessarily a professional expertise: one was a mountain climber who had gained his knowledge through a leisure pursuit. Neither was expertise defined as being necessarily consistent with legitimate knowledge about accidents: the astrologer, for instance, had a body of knowledge that was in many respects constructed explicitly in opposition to dominant contemporary beliefs about misfortune. Selecting people with no specific expertise, the 'lay' public of the accident prevention literature, proved more problematic. It became clear that it would be difficult to find a specifically 'lay' sample of people to interview, as many people in contemporary Britain have formal knowledge about accidents. Three mothers, chosen initially to represent a non-professional view of accidents, did in fact draw on several bodies of professional knowledge during the interview. Two were registered child minders and had worked in nursery schools, and were thus 'professionally' informed about practical and legal aspects of preventing accidents to children. The other was completing a course of study in law which had included study of health and safety legislation. The children were perhaps the only interviewees who were identifiable in any obvious way as 'lay' people.

Given that the aim was to explore the possible contours of beliefs about accidents in contemporary Britain, the interviewees were selected to provide a broad range of possible views. They were identified largely through personal contacts and are therefore not necessarily representative of their profession, or of any other group. All the children lived and went to school in London at the time of the interview. Those interviewed are listed in Table 1. All names have been changed.

Quotes indented or in single quotation marks are verbatim excerpts. Those examples taken from a single speaker are annotated with the speakers identification in brackets afterwards; dialogue is reproduced with the speakers identification first. Three full stops (...) indicate material omitted by the author; square brackets enclose explanatory material inserted by the author.

Table 1. Sources of interview data

Interview number	Identification in quotes	Details - expertise
1	Home accident clerk 1	Responsible for collecting data from patients who visit Accident and Emergency department for treatment after a home accident. These data are used by the Department of Trade and Industry to collate statistics on home accidents.
2	Home accident clerk 2	(as above)
3	Actuary	Responsible for assessing the probability of certain events and advising insurance companies on how to set premiums to cover these risks.
4	Astrologer	This astrologer had an interest in the astrology of accidents.
5	Mathematician	Reader in Mathematics, studying 'chaotic' systems
6	RAF Doctor	With some knowledge of air accidents as well as a general medical expertise on accidental injury.
7	Health Visitor	Runs a post-natal group for mothers on how to prevent accidents.
8	Mountain climber	Had recent experience of a mountain accident and considerable knowledge of risks on mountains.
9 (Focus group with 4 mothers and 1 child)	Ellen, Cathy, Sue, Pat and Pat's daughter, Katy	All three mothers had school age children. Two mothers were registered childminders and had worked in nursery schools. Pat's daughter (age 7) attended as she had accidentally sprained a foot, and was off school.
6 (2 children)	Amelia and Jessica	Aged 8 and 6 respectively.
7 (1 child)	Adam	Aged 6.
8 (2 children)	Anja and Maria	Aged 6 and 8 respectively.
9 (Focus group with 6 boys)	Darren, Jason, Anthony, Matthew, Leroy and Gavin	Aged between 7 and 12.

Some problems with interviewing as a technique for accessing knowledge about accidents

Initially, the interview data seemed rather difficult to analyse and not particularly useful. People made apparently contradictory statements about accidents: for instance claiming at one point that 'they just happened' and that nothing could be done to prevent them, and then claiming a short time later that all accidents could

be prevented if care was taken. The interview transcripts often contained many pages of material that seemed to have little relevance for a study of accidents. Stories recounted about accidents were used as springboards to discuss a wide range of other issues: personal philosophies about luck and fate, personal problems relating to social relationships or work, accounts of professional bodies of knowledge that were not related to accidents. A more structured interview schedule may have focussed discussion more carefully, but even with very general questions it was difficult to avoid directing responses. When asked how they would define an accident, several of the adult respondents tried to refine the question in terms of their assumptions about my interests: 'Do you mean injury type accidents?' or in terms of what they assumed to be my interest in their ideas. Although the interviewees were sometimes asked if they would participate as a result of informal comments they had made to me about accidents or their causes, they became less articulate in a semi-formal interview situation. This may be partly a reflection of the quality of the interview, although I had never experienced either this lack of focus or the inability of respondents to expand on a particular theme when interviewing about other issues. It was as if the very act of consciously reflecting on accidents meant that they almost disappeared. Direct questioning about accidents (such as that carried out in the coroner's court) dissolved them. However, some of the problems with the data began to make sense as these 'problems' became data in themselves.

First, accidents appear in social intercourse in a number of ways. They appear primarily as stories: events recounted for entertainment and perhaps to make a moral point. The story of how a car crash happened is told as a dramatic narrative, with clear accounts of the causal chain of events and of who was to blame and why. It is possible that such stories function in a psychological way to help relieve the stress of such an event, and perhaps in a social way to construct consensual understandings within social groups about the proper responsibilities one should take when driving. Whatever the motivations for and covert 'functions' of telling and listening to accident stories, they are a crucial way in which knowledge about accidents is produced. This knowledge is thus embedded

in everyday conversation, and attempts to isolate it as the 'theme' of an interview wrench it from the very material from which it is constructed.

A second manifestation of the accident in everyday conversation is as a 'bargaining tool'. Appeals to the accidental appear when during negotiations about apportioning moral responsibility. This interchange between myself and my seven year old daughter is perhaps typical:

> **JG** Can you move that cup or it's going to get knocked over.
> **Rebecca** No it's not - I'm being careful
> **JG** Well, if it does get knocked over, I'll be cross
> **Rebecca** You can't get cross if I knock it over accidentally.

To claim that a misfortune was (or would be) caused accidentally is to make an appeal against punitive action. Both of these situations - stories and moral bargaining - are rather difficult to recreate in an interview setting. The invitation to tell the story of the 'last accident that you experienced' is somewhat artificial: the interviewer is not an impressive audience, and the act of reflecting on why you have chosen it as 'an accident story' is enough to destroy any narrative drive. The mountain climber, although he recounted his last accident in a rather stilted way in the interview, was adept at telling the story as a humorous and dramatic anecdote in less formal situations. However, the children interviewed in groups and pairs produced definitions of accidents in the interaction between themselves and in the process of vying for my attention as the teller of a story. Here there was a 'proper' audience; other children, who would contradict, encourage and respond to the events as narrated. As a interviewer in a one-to-one interview the role of audience is rather difficult to play without entering into a 'normal' conversation and leaving aside even the minimal conventions of interviewing. There was clearly a methodological dilemma here, for entering a 'normal' conversation would clearly involve contributing my own ideas about accidents and may have merely provided an opportunity to encourage respondents to put in their words what had already been formulated by me.

A more ethnographic approach involving participant observation would presumably have avoided many of these problems and would perhaps have generated the kind of 'natural' data that disappears in an interview, however informally conducted. Christensen (1993), for instance, has demonstrated that ethnographic research with children can generate rich and naturalistic data about how they construct the social world, and that it is possible for the adult researcher to step outside of normal adult roles (and the expectations that children have of them) even if they cannot 'pass' as a child. However, the tensions present in these interview data seem to provide clues in themselves to understanding the nature of accidents. They raise questions about what it is about accidents that means that it is difficult to reflect on them, and why as stories they often require audience involvement. Those with some expertise on accidents (that is, most of the adult respondents) provided what, in Cornwell's terms (Cornwell 1984a, 1984b) might be called 'public' accounts of accidents: what they believed a professional account of accidents ought to consist of. One to one interviews, however well the interviewer was known and trusted by the interviewee, can perhaps only ever produce these public accounts. However, the focus group interview did provide an opportunity for more 'natural' story telling, eliciting less stilted accounts. As Kitzinger (1994) has noted, focus groups may be a particularly useful technique for studying how shared meanings are negotiated and contested in social interaction.

WHAT IS AN ACCIDENT?

First, the concept of an accident was a meaningful one for all of those interviewed. They could all, whether 'lay' people, like the children, or 'professionals' like the actuary whose work perhaps epitomises the modern mapping of risk, identify the kind of event which they would label an accident. Accidents were first of all a type of event, usually injuries of some sort:

I fell off my bike a few times (Anja)

I scalded my hand on the kettle (Jason)

Anything that would cause harm to a child (Health Visitor)

When I banged my knee and it was bleeding (Adam)

However the label 'accident', as has been noted, explains something about the way in which such outcomes happened as well. As Anja points out, not all injuries are necessarily accidents:

Anja Once I did something on purpose on my bike. I fell off my bike because everybody was helping Maria on her new bike. I got jealous that everyone was looking after her, so on purpose I just made myself fall off my bike and then I really hurt myself.
JG So that wasn't an accident?
Anja No, 'cos it was on purpose

At some point, most of those interviewed provided definitions which appeared to coincide with the 'lay view' which emerged from the accident prevention literature; that is, they emphasised either the unpredictability, luck or lack of motivation involved in the causation of the event.

Things like electrocuting yourself by accident...you can't predict that (Actuary)

It's a coincidence, like. Some people get accidents and some don't (Leroy)

Something that happens that's out of your control, that you can't prevent (Cathy)

It's unintentional (Pat)

Some definitions provided by these interviewees combined the sense of an accident as the outcome of the event (damage or injury) and the cause of the event.

> An accident for me is a bodily mishap that happens to people without any intention of hurt, either on the part of the sufferer or the agent (Astrologer)

> It's people falling down the stairs, breaking plates in the sink... half the time when you ask a question how they done it, they've just tripped for no apparent reason (Home Accident Clerk 1)

> It's something fairly bad for you that's not intentional (Mountain Climber)

> An accident is something that goes wrong... by accident that actually hurts you (Amelia)

In summary, all of those interviewed could provide an abstract definition of an accident which stressed the unpredictability or the blamelessness of the act, as well as the kind of outcomes they produced. However, it soon becomes clear that these initial working definitions (usually provided early on in the interview, and following a direct prompt for a definition) only serve for ideal or hypothetical cases. When people begin to talk about actual events which they had experienced, accidents were rarely either unambiguously unpredictable or unambiguously morally neutral. Indeed, few accidents from the interviewees' own experiences matched these initial abstract definitions.

Predictability

In accounts of accident experiences the principle of unpredictability was compromised in several ways. The first depended on aggregation. The actuary, for instance, talked about accidents first as specific events, which could not be predicted 'that would come out as a sort of blit' in the statistics. But in this respect they were like any of the other uncertainties that he dealt with, and would be averaged out in the process of calculating risks for sections of the population:

> they [life assurance firms] might look at the stats on accidental death and say 'are they significant?' If ...they were getting a significant number of accidental deaths they would have to [load the premiums] but typically it's the case that things even themselves out (Actuary)

Mapping the rates of events (be they accidents or any other misfortune) did nothing to help you predict any individual event. Although a sophisticated knowledge of risks reduced the uncertainty enough for insurance companies to offer profitable Life Assurance products to their customers, they could not help in predicting individual misfortune.

> This guy might look as healthy as can be, a good risk, and then he just pops his clogs for no reason... You can get the actual production of these statistics down to a fine art...but it will still...be an estimate ... You're dealing with uncertainties and no matter what you base it on, it's basically an estimate (Actuary)

This contrast between the predictable and unpredictable is presented in epidemiological terms by this professional: the argument that population statistics are not very useful for predicting what is going to happen to a particular individual but that in general accidents were predictable outcomes.

Although other respondents did not reduce unpredictability through aggregation, there were other ways of constructing individual accidents as, at least in part, predictable. One important distinction made, explicitly or implicitly, by many people was between accidents which 'just happen' and which nothing can be done to prevent, and those which should, by the actions of the victim or others, have been prevented and were therefore predictable. As Amelia puts it 'some of them are going to happen anyway'.

One of the home accident clerks, for instance, thought that accidents could be divided into two kinds, those that could be prevented and those which nothing could be done about:

> Some, as I say, I suppose what I call the sensible accidents can be helped. But as I say the children falling from swings, you'll never stop will you? (Home Accident Clerk 1)

However, even the latter, which she later defined as the 'careless' accidents were not completely unpreventable.

> I mean most of it is carelessness, but if people could be made more aware perhaps they would you know, like they've got curly flexes for kettles and so on. (Home Accident Clerk 1)

Her colleague likewise initially attributed half of the accidents she saw to 'stupidity really, carelessness, which half of the accidents come from' (Home Accident Clerk 2) and the other half as 'proper' accidents: 'They just happen' (Home Accident Clerk 2).

Even these remaining 'ideal' accidents that nothing could be done about, were not, though, purely random occurrences. First, the idea of the 'accident prone' individual serves to reduce the unpredictability. Many of the respondents viewed certain individuals as being more likely to suffer accidents than others. Two of

the respondents, for instance, described their children as accident prone: children who are more likely to have accidents than others, regardless of the environmental risks that surround them:

> I mean when he started to walk it was always 'Oh, my God, there, he's over again!' Every other second he was over, crashing into doors, bruising all over him, it was just an utter nightmare, quite frankly. Yet some children, like Thomas I had to look after, when he got up and walked he waited till he was safe. You know, you weren't every second behind him. He just walked. (Cathy)

> My eldest one is always falling down the stairs, always rushing about. I bet she falls down the stairs once a week, honestly. 'Cause she's erratic mainly. There's nothing wrong with the stair carpet, it doesn't matter whether she's got boots or slippers on... (Home Accident Clerk 2)

A large number of factors were seen to put people at risk of accident proneness, especially for children. Among those mentioned at various points by these respondents were: clumsiness, infections that affect balance, poor eyesight, living in large families, pride, over-eagerness, precocity, being easily distracted or absent minded, having a butterfly mind, just having had a growing spurt, having a poltergeist and having a 'wild' personality. Although this range suggests that 'accident-proneness' is an attribute that could be used to describe almost anyone (and certainly any child), there was in practice a consensus about who was and wasn't accident prone. When one of the mothers in the focus group mentioned her child as an example of someone who was accident prone, she elicited laughs and murmurs of agreement from others who knew the child. Being accident prone was seen as a character attribute that was an obvious one, visible to anyone who knew the person, and one which could be used to make accidents in any area of that person's life, to a certain extent, predictable:

JG ... do you think pilots have this perception that some of their colleagues are more likely to have accidents than others?
RAF doctor Oh yeah. But that's the same in any walk of life. You know the accident prone people ... there's people you're not at all surprised that they've crunched the car again.

Other people were just as self-evidently not accident prone. However, not being accident prone was more likely to be described as the result of 'luck' than in terms of the kinds of risk factors that contributed to accident proneness. Leroy, for example, was seen by his friends as well as himself as someone who could take risks without suffering injuries:

JG So are there some people who have more accidents than others?
Leroy Like I've never had an accident before and I reckon that's a coincidence.
Matthew But he was sitting on the chair right ... with two legs up like that - and he could have fallen back and broken his leg!
Leroy Right, so its coincidence, like. Some people get accidents and some don't.

Similarly, the actuary ascribed the fact that he had experienced few serious accidents to luck:

I haven't had any near misses where I've gone 'phew! I was lucky!' I suppose you could say I've never come close to electrocuting myself, or being run over... I'm certainly not exceptionally unlucky in that things happen to me (Actuary)

The only person to attribute the fact that they were not accident prone to their own skills or attributes rather than luck was, perhaps surprisingly, the astrologer, although even she 'touched wood' with a smile after this comment:

> The reason I say that I don't easily have accidents is that I'm so careful. I'm sure footed and in control. I'm very unlikely to sort of dash or not think. I'm very careful, I plan. (Astrologer)

Even she later noted that such attributes were typical of earth signs such as her own. Accident proneness may result from an identifiable set of risk factors, but invulnerability to accidents results largely from luck.

Moral neutrality

The accident in practice is not, then, unambiguously unpredictable, even as an individual event. Neither is it an unambiguous statement about moral neutrality. An accident is both a category of outcome and a category of causation, and sometimes accident outcomes were explicitly explained in terms of non-accidental causes:

> Sarah [daughter] had an accident last year. Well, call it an accident - I mean I think it was deliberately done by another child, when it happened. That's why I felt so angry about it. (Cathy)

Even where there was no overt questioning of the label 'accident' to describe the causation, accounts of accidental events were surrounded by attributions of responsibility and blame:

> **JG** What was the last accident you had?.
> **Mountain climber:** The car! Driving into the central reservation at top speed on the motorway [laughs]
> **JG** How did that happen?
> **Mountain climber** It was the other guy's fault and not mine...

[describes the accident]

JG So you'd describe it as an accident even though you thought it was his fault?

Mountain climber It was the other driver's fault in the sense that nobody was, you know, one driver wasn't looking where he was going... but it wasn't intentional on their part.

The accident, in accounts like this, arises from actions which were negligent, but not maliciously intended by an other agent. Designating an event as accidental does not absolve actors of blame, it merely places the event within an arena of moral negotiation, in which responsibility is attributed. Some negotiation occurs internally, in cases where respondents report holding themselves to blame, or at least considering this possibility. Self blame arises first from negligence, or ignoring known risks:

> Sarah [daughter] winged off the top of the work surface in her bouncy chair...and you're always told categorically never to put bouncy chairs on work surfaces ... so the guilt was huge...Isn't that awful! (Cathy)

In other cases, though, there is just a generalised sense that more care could have been taken:

> When [daughter] caught her finger in the train door, I thought 'why did we sit in that part of the carriage' - the door slammed and that was her finger...you do feel quite guilty and that - I really thought it was my fault I'd sat her there (Home Accident Clerk 2)

> I was on a step ladder and thought I was on a stool... and went to step off and I was four feet in the air instead of two feet...It was my fault - stupid, careless! (Home Accident Clerk 1)

The idea of negligence rather than maliciousness did not, though, account fully for why some misfortunes were classified as accidents. For the mothers, a sense of responsibility for accidents to their children was seen as inevitable, even where there was no direct sense in which they could be held culpable for neglect:

> **Pat** When she fell down stairs at my friend's house - she split her head open - I felt awful. I felt very guilty about that
> **JG** Why did you feel guilty?
> **Pat** Well, I don't know. Maybe I felt I should have been supervising her coming down stairs
> **Ellen** But on the other hand you can't actually shadow her the whole time.

Although one might refer to such events as 'accidents', they are not purely blameless events, and the victim (or their carer) attributes responsibility to themselves, even in cases where negligence is not directly implicated in the causal chain of events.

Only accidents in general and those which 'just happen' could be described as 'no one's fault', most specific instances could be traced to particular causes, with blame potentially attaching either to the victim or an other for negligence. The actuary for instance, suggested Acts of God as classic accidents, but when asked to think of instances, could only identify being struck by lightning:

> being hit by lightning or something like that, or being drowned at sea would count -or it might do...but it wouldn't be an act of God, it would be an act of negligence on the part of the ship's captain (Actuary)

Similarly, he thought, most traffic accidents would involve some human agency:

> [they happen because] they're a crap driver [or] if their brakes fail, its the fault of the mechanic who serviced their car (Actuary)

A wide range of agents were held to be responsible for accidents. For accidents to children these included other carers such as fathers, school teachers and meals supervisors; other children and agencies which were seen to have some specific responsibility for safety. Here, for instance, Pat describes how she attributed blame an accident in which her daughter's foot had been injured when it was caught under a boat on a fairground ride:

> At first I was angry with Dan [husband] because he was in sole charge of them [the children] at that point, and then I was angry with the ride people because I felt it was a gentle ride, it wasn't a ride that was scary or frightening or had any amount of risk in it ... I felt it shouldn't have happened, I think there were certain safety measures they could have taken (Pat)

It is apparent that there are no events which are unambiguously accidental in terms of the definitions first suggested - the term 'accident' emerges as a provisional category only, and one which is open to negotiation. Indeed, in conversations with children, it seems that stories about accidents serve specifically to organise and debate ideas about moral responsibility, as these three examples illustrate:

> **Maria** We was sliding down the stairs and I was on her lap and then suddenly I fell down and she fell on top of me.
> **Anja** And I bumped my head and it really hurt!
> **JG** And was that an accident?
> **Maria** Well it was an accident 'cause we were never told that it would hurt us.

Anthony ... and I saw my friends ride down these steps ... and I thought I would be able to do it ... so I tried it, and I fell over, so that was a silly thing to do.
JG So what do you think caused the accident?
Anthony Me being silly, 'cos I shouldn't have been watching other people, what they do, 'cos they might have been cleverer than me!

Leroy Tell her about that accident when you fell off the roof ...
Jason One time, we was playing up on the shed roof, he got up, and I wanted to and we had a fight up there and I fell down ...
JG So if you get hurt in a fight, could that be an accident?
Leroy No, 'cos you shouldn't be being naughty.

For these children, the analysis of accident experiences (which may only be labelled as such provisionally, as Leroy's last comment indicates) involved the identification and apportioning of various responsibilities, such as obeying adults, copying one's friends, accepting dares or knowing your own physical limits.

Accident stories

The 'accident story' seems to be a commonly used narrative device for producing this arena of moral negotiation, in which responsibility for the accident is apportioned. The accident story is often introduced overtly as a story:

Tell her the whole story, from the beginning, Mel! (Jessica)

I haven't told you my story yet ... (Gavin)

> And mountain climbers tell great yarns about near misses ...
> (Mountain Climber)

Several kinds of accident story were told in these interviews. The first could be called the 'accident horror story', lacking in much circumstantial detail and often merely one line long.

> I knew a child who grabbed the bars of an electric fire (Ellen)

> I used to work in a machine factory - because the machine was so fast you couldn't use protectors, so it used to take your hand off didn't it? (Pat)

> Remember that boy who hung himself by his rucksack in the toilet? (Cathy)

Such 'horror stories' are typically about other (unknown) people or about worst possible scenarios, rather than about personal experiences. They provoke strong reactions in the audience of blame for whoever was seen as responsible, pity for the victim, or merely shocked gasps, but little in the way of debate or analysis. Children's 'horror stories' were almost urban myths, in that they happened to 'a boy in the other class' or 'a friend of my friend's'. They included a story about the boy whose finger fell off after he left an elastic band wound around it and someone who put a whole apple in their mouth and had to have it cut out.

The second kind of story is the personal experience account: the story of a specific event that happened to the narrator (or someone in their care). These stories are much more complex and consist commonly of a brief comment about the setting, a dramatic account of the events leading up to the injury (or other outcome), sometimes a 'worst possible scenario' as a hypothetical alternative outcome, and finally an attribution (or attributions) of responsibility. For the fairground accident which Pat refers to above, the 'worst possible scenario' was a broken foot.

Cathy's 'worst possible scenario' in a story about her daughter's hand being hurt in a pump was that 'the top of her finger had been taken off'. Here is a typical personal accident experience story, again from Pat, describing a playground incident, in which she holds the school responsible:

> Well, there was that accident with Lizzie at school, which I felt was **totally** preventable. I felt that was lack of supervision at Downlands [school]. In the playground they were playing that bulldog game, which is notoriously dangerous game and Lizzie, well she sort of bashed her teeth and lost her tooth through it... she said she banged her mouth falling on a drain, so she obviously caught the drain in the wall... I think schools, especially dinner ladies and teachers and that, have to be very aware (Pat)

This one is from the mountain climber, which he perceives as his responsibility:

> I went climbing in Wales with four other people...the chap I was climbing with went up first on the first leg of the climb and tied off at the top. I climbed up after him and the theory was that I climbed up the next length. So I got almost to the top of that length and that's where I slipped... about three feet before the next ledge, where I could make myself permanently secure, I slipped. And so I fell about twenty foot, after twenty foot the temporary anchors I had been making all the way up took up the slack and I started dangling from that point... the actual fall did no damage whatsoever. The circumstances as I fell off having managed to get my foot wedged in a good crack in the rock so as I fell off the foot didn't come free very easily and when it was wrenched out it was twisted quite considerably... with hindsight it could have been avoided ... there were several mistakes made. (Mountain climber)

Unlike the 'horror story' these stories provide a vehicle for exploring various possibilities for apportioning responsibility, and of various different potential outcomes from the same set of circumstances. However, the accident story is rarely told as straightforwardly as in the examples above (indeed perhaps only in relatively formal situations such as interviews). Even in these interview settings, different elements of the stories were contributed or openly contested by members of the audience. This audience involvement produced the third kind of story, which was a more collaborative account, clearly part of a shared experience. The dramatic account of the actual course of events is then considerably shortened, often to the point at which an outsider cannot follow what happened. In this account of an accident, for instance, it is impossible for many of the audience to follow what happened (although several of the audience ask for clarification), and only the other participant who was involved in the incident described (Katy's mother, Pat) does seem to follow the narrative:

> **Katy** Because one day at play group like someone was throwing things and he like ran away before he could hit it -
> **Sue** What was that?
> **Ellen** What it? The child?
> **Katy** Me! I was throwing things and one of them - no, that one I made, that long thing, started throwing those things
> **Pat** Oh yes -
> **Katy** Because they were plastic
> **Pat** But that's why we tell you to pick them up, so you don't fall over.

Such accounts, condensed to the point at which those who did not share the experience cannot understand them, suggest that the story has been told many times, and only a few reminders are needed to elicit the main message: here, that the 'things' should be picked up to prevent accidents. One such story that several of the children I interviewed (who came from the same school) knew was clearly in this category: it had been told many times and had the status of a playground

myth, somewhere perhaps between a 'horror story' and a collaborative story. Children contested details such as who the main character was, what his injuries were and whether he went to hospital. Jessica and Amelia's account of the event is perhaps the clearest, and is clearly a collaborative one:

Jessica Can I tell you something? Once someone tripped when they were high up on the pole and
Amelia Yeah, and they broke their nose and they
Jessica And they had to go to hospital and their mother didn't know which hospital they went to
Amelia It was that boy, wasn't it?
Jessica I've forgot
Amelia I know who it was - Omar
Jessica It wasn't Omar
Amelia Uh, uh. He was on the pole
Jessica It wasn't Omar
Amelia Yeah, people go round that pole sometimes and lots of people climb up and he climbed the pole
Jessica It wasn't Omar
Amelia And he slipped, um, but I wouldn't really say that was an accident
Jessica It wasn't
JG You wouldn't? Why not?
Amelia Well, I don't think it was his actual fault because someone had done it before I think, and told him to do it - said like 'I dare you'. I don't think it was his fault, but -
Jessica He shouldn't have done it
Amelia He shouldn't have done it, anyway

This exchange is initiated by Jessica's request to tell a story: 'Can I tell you something?', although Amelia then provides most of the details. Although these children are in dispute about who the victim of the accident was, this seems

largely irrelevant. What does matter to the successful telling of the story is that they come to an agreement about where responsibility lies. The injured boy cannot be held completely to blame, as this is an activity others have tried (presumably without ending up in hospital) and the possible 'dare' legitimated his attempt. However, for these girls, accepting dares does not apparently absolve the victim of any responsibility: Amelia echoes Jessica's 'he shouldn't have done it anyway'.

Attributing responsibility

There is, then, a gap between the complete lack of blame implied by calling something an accident and the actual amount of responsibility victims and others are expected to take. In practice, the actions (or inactions) of many people may contribute to an accident, and identifying where responsibility lies can be difficult, as Anja relates:

> **Anja** I broke something once and I was really upset. It was one of those slide picture things, where you draw a picture and you slide it out and you start again... the car seat rolled on it - I felt like it was my fault 'cos I was in the back and it was nearest to the back... [my sister] had dropped it down the back seat to blame in onto me. So I felt it was my fault, when it was actually [sister] who did it. But it was nobody's fault really, but it was sort of my fault.
> **JG** Was it an accident, do you think, that it got broke?
> **Anja and Maria** (in chorus) It was an accident

Children do, of course, use such ambiguity about accidents deliberately to avoid blame, as Anja admits:

I hit Zara once, but I said 'it was an accident' (Anja)

The ambiguity of such claims to the accidental was also for humorous effect. Gavin, for instance, was one of a group who were busy squashing ants with their fists on the table as we talked:

Like that was an accident - I just tried to stop Leroy killing one, and then my hand accidentally went 'crash'! (Gavin)

When the ambiguity was genuine, for instance when an 'accidental' outcome resulted from an act for which clear responsibilities had not been apportioned, adults could be frustratingly unable to accept that it was genuine:

Jessica Once Hanifa [teacher] was chatting with Yesim [school friend], because she had hurt her hand, it was cut right there... and she [Hanifa] was saying 'was it an accident or was it on purpose?' and Yesim said 'I don't know' and Hanifa said 'You must know if it was an accident or on purpose' and Yesim said 'I don't know' and Hanifa said 'just tell me' ...
JG Do you think you always know whether -
Amelia and Jessica No, no
Jessica No, but Hanifa thought you must. She said 'you must [know]'

The accident in practice, then, is the result of rather more ambiguous responsibilities than the ideal definition first suggests. Sometimes the tension between abstract definitions and the difficulties of finding an event that met them were followed through to their logical conclusion, and respondents could not think of any events which could ultimately be described as accidents. The RAF doctor, asked what kind of accidents might happen in training, can't think of any that would be 'just' accidents, as pilots should predict most uncertain outcomes through their awareness of their causes, such as cloud cover or lightning:

> Let me think of a case. You fly into a hill in cloud, which is always down to pilot error really because he didn't recognise the weather was bad and abort early enough and get up to a higher level... (RAF doctor)

> You could have lightning strike. Certainly. But then the question is obviously if there was a risk, lightning risk warning, why was the pilot flying? (RAF doctor)

All such events would be investigated officially by a board.

> **JG** Does the board ever find it was an accident? Do accidents ever happen?
> **RAF Doctor** I mean basically it can be a mechanical error or a pilot error. There's only two things that can go wrong really, I suppose. The aeroplane or the pilot.

As he comments, 'the system doesn't like a pure accident'. We might suppose that even if such an event had to be officially attributed with a 'cause' then it would still be described unofficially as a tragic accident. But this doctor went on to describe a mess room ritual that would happen in the event of a pilot dying in such a crash, which suggests that even informally such events would be attributed with a non-accidental cause. This involves, among other things, a ritualistic rubbishing of the dead pilot's professional reputation:

> People start talking about memories of him, and the memories tend to be, 'oh well, he always did take risks', you know, 'you know what he was like, he always pushed it'. (RAF doctor).

The pilot's propensity to take undue risks (to be 'accident-prone') serves to reduce the uncertainty about the tragedy. The notion that an accident could happen to anyone in mid air is perhaps too much for anyone expected to get into a plane

every day and fly to cope with. Such misfortunes have to be explained as predictable - and therefore preventable - events.

Preventing accidents

For many of the respondents, then, there were two kinds of accidents, preventable ones and those that 'just happen'. When the children were asked if accidents could be prevented, they could repeat safety advice they had learnt at school, often in chorus as a kind of mantra:

> **JG** Some of you had some ideas about how you could stop accidents happening..
> **All (in chorus)** Look, listen, learn...
> **Matthew** Stay in your bedroom
> **Several** [loud noises of protest]
>
> **JG** So how do you stop accidents happening?
> **Amelia** Be very, very, careful

Adults also provided general advice consistent with this notion of taking more care:

> There are lots of people who just do not have equipment ... With tiny children [safety] has to be your first priority - you can't be too careful (Health Visitor)
>
> **JG** So can you prevent accidents happening?
> **Accident Clerk** Yes, by being more careful...

Accidents, in short, could be prevented if care was taken to reduce risks. However, like the definitions, this advice was given in a general sense, and often individual accidents were seen as rather more complex in their causation - or at least the risk calculation involved in preventing them was seen as being rather less obvious than the safety advice suggested.

> **Anthony** When I was drying up ... trying to dry it too fast, and the plate slipped out of my hand, and I got grounded for a week. And I didn't think that was fair
> **Matthew** Yeah, and Darren said ... 'well you should have been holding it with two hands!'
> **Simon** Well, if I'd been holding it in two hands I wouldn't have been able to dry up, so Darren's a bit wrong!

Again, the idea that some people clearly took risks and didn't suffer accidents while others were more risk averse yet did suffer them, undermined any simple faith in 'care taking' as prevention. Cathy describes, for instance, a mother who she felt often took 'an enormous risk with her child's safety', but whose child never suffered a serious injury:

> **Cathy** ... And how that child is alive today is an absolute miracle, but she is...
> **Ellen** And these things happen and there's a certain lack of logic in it. I can remember... there was a women who had a young toddler, and she kept an eye on this child the whole time and was very strict about keeping an eye on it. And then one day she was on the phone, left the door open, child went wandering out, fell down a storm drain and drowned. In this much [demonstrates] water.
> **All** Oh, oh no
> **Cathy** These things do happen

For these 'pure' accidents, those that just happen, the very idea of prevention was a source of humour if the accident did not have such a tragic outcome. Ellen, for instance, recounts the story of an accident that happened to her son while on holiday. He had run headlong into a stone sink, jutting out from the cottage wall and had been concussed. Asked if that could have been prevented, her comments provoke laughter in her audience:

> No, because I think you can over-compensate. I suppose the owner of the cottage could have said 'beware of outcrops of granite!' (Ellen)

When pushed to describe how individual accidents could be avoided, children also soon saw that there was a limit to how far the preventative logic could be taken, as Amelia's argument with Jessica and her final, sarcastic, response to my question indicate:

> **Jessica** [You could prevent] falling off you're bike, because someone could be there to catch you.
> **Amelia** I know, but someone might not be there! ... I was just riding along and I knew I was going too fast and I just pulled on my front brake and the back wheel went [makes noise] and I went flying over.
> **JG** So who's fault was that?
> **Amelia** I don't think it was anyone's fault, do you? The people who put the tarmac there.

The notion that all accidents could be prevented was seen as flawed, simply because some 'just happen'. However many risks were taken into account, there were always some that could not be foreseen:

> All you can do, I feel, is have control over the things that you know you can control, like holding hands when you cross the road. I

> mean there are always unforseen dangers like a bus mounting a pavement [which] can mow you all down or whatever (Cathy)

> You reach for a good handhold and it turns out it's actually a loose rock and not a good handhold - that's luck. Obviously if you didn't go climbing it wouldn't happen. You are taking a risk doing it, you know it's possible... you can reduce risks ... but you can never counter everything that could go wrong (Mountain climber)

This is not to suggest that these respondents were 'fatalistic' about accidents, or did not take specific actions (as opposed to more general 'taking more care') to prevent them. On the contrary, like the respondents interviewed by Roberts et al (1993), most took considerable numbers of actions to keep themselves and others safe. When asked what could be done to prevent accidents to children, the first responses of the mothers interviewed all referred to personal action they could take to reduce accidents in their homes, including installing a range of safety equipment and educating their children about safety consciousness:

> **Ellen** I mean I think there are for me certain fundamental things, like stair gates are an obvious one. Everyone gets stair gates.
> **Sue** We never had a stairgate...
> **Ellen** Well, that's terrible parenting!
> **All** (laugh)

> ... and I said 'don't eat anything that you find in the garden, don't eat any berries at all'. I thought that was the simplest thing (Cathy)

For mothers, avoiding accidents in the home was seen to be a combination of 'common sense' about the hazards that existed and a detailed knowledge of the particular risks to which their children were most vulnerable. Particular children were reported as more likely to, for instance, poke things into electric sockets or

run into sharp door catches. Other agencies were also seen to have a responsibility for preventing accidents to children, including schools and other carers who were expected to act in loco parentis, and take the same care about hazards that parents did. In addition, parents also made many suggestions that involved 'engineering' or 'enforcement' strategies, such as advocating that children's bicycles should not be sold without helmets, or writing to the school to suggest that school trips should only use buses with fitted seat belts.

For these mothers, the greatest threats to safety were other people. Danger resided particularly in two groups; those with no 'common sense' about how to avoid accidents and those whose particular vulnerabilities to risks were unknown. This latter group consisted mainly of other children:

> I make my home as safe as possible. I mean, I knew where the dangers were and my children knew basic dangers, but other children don't foresee those dangers. And they experiment in different ways to your children. So you might be used to watching out for your children in certain areas... and then another child comes in ... and you've got to watch them all the time (Pat)

Those with no 'common sense' included those with no personal experience of children, and those who had been observed taking what were seen to be undue risks:

> **Cathy** Some people are very lax, they let go of children's hands. I mean one teacher let go of a child's hand on that crossing! I mean, I thought 'I don't believe it'... When I worked at the nursery, I mean there were some people there who were very lax
> **Ellen** Did they have kids themselves?
> **Pat** Some people just don't have that common sense, they just don't have that kind of thinking to prevent -
> **Cathy** No, to me it's just common sense.

For these mothers (who all had primary responsibility in their households for childcare), the group of people with no 'common sense' about accident prevention also included men generally, and their male partners in particular. Cathy relates the tale of her husband asking her, after seeing a programme on television about scalds from hot water, whether she ran the cold water in the bath first:

> **Cathy** ... and he actually said to me [laughs] because he's not very safety conscious, he said 'you do run the cold in first, don't you?'
> **All** [laugh]
> **Cathy** After all these years, you know! It had never occurred to him before, so it was educational, that he watched that programme!
> **Pat** Actually I do notice that men are not nearly so safety conscious as women
> **Ellen** No, they're not
> **Pat** I can't go to the park with Dan [husband] because he scares the living daylights out of me..
> **Ellen** Yes, mine's just the same

The particular 'dangerousness' of men where the safety of children was concerned was explained as a combination of their relative inexperience with young children, their 'nature' and their 'upbringing'.

The dangers here are perhaps those of inadequate mapping of risks. Other people (men, certain teachers) demonstrate an insufficient understanding of risks, and other children pose unknown vulnerability to risks. It was not just parents who saw danger residing in risks that were unknown, and particularly in 'other people's' uncertain knowledge of those risks. The mountain climber, for instance, talked about preventing mountain accidents in terms of knowing the risks one faced when hill walking or mountain climbing. Accidents may happen because known risks were taken:

> ...say... walking, continuing to try and do a walk when the light is fading, it's mid winter and you don't know where you are. If you are lost, trying to continue upwards rather than like head south to the road or something - that would be a stupid risk (Mountain climber)

However, there was a sense in which such dangers were, like his example of reaching for a hand hold that turned out to be a loose rock, known and knowingly risked. More dangerous was unknown risk which arose from ignorance:

> I suppose there are those people who would go mountain climbing who have no experience and therefore no knowledge that they are taking those risks, which is fairly careless in the sense that beforehand perhaps you should put some effort into trying to find out more about what you are doing (Mountain climber)

Such 'careless' risks, from inadequate knowledge of the possible dangers one faced, were rather different from those that 'just happen' and cannot be prevented. As an analogy the mountain climber contrasts the novice who might injure themselves trying to mend a television with the expert:

> ... if you have no knowledge of electronics then it's pretty stupid to open up your television and start sticking a screwdriver into it... if you were a qualified electrician you can still have an accident doing that. (Mountain climber)

Danger resides not so much in the external world (the television, mountains) and its hazards (electricity, loose handholds) but in the inadequate mapping of those hazards. Those whose maps are most sophisticated (mothers, experienced hill walkers) may know they are as vulnerable to accidents as the novices, but they report their vulnerability as having known, and therefore safer, boundaries.

Balancing risks

This last comment by the mountain climber, and the one above claiming that 'luck' played a part in whether the hand hold turned out to be a loose stone, suggests that rather than simple fatalism, what is at work here is a balancing of risks - of known, but remote, possibilities of danger against known pleasures. The only way to prevent the accidents that 'just happen' is not to take part in the activity at all:

> It's preventable in the sense that you could say that they were stupid going out in that weather ... but they have made an assessment of that risk. But you could prevent it, you could prevent them all by sitting at home doing nothing (Mountain climber)

The risk of boredom is likewise contrasted with the risk of playground injury by Katy, in response to her mother's comments that her father would let her use playground equipment she felt was unacceptably dangerous (as there was only concrete beneath):

> He used to take us there because it was the only bit with seesaws and swings and fun stuff really. Or we had to run around this wooden thing which was boring (Katy)

Similarly, for the mothers and for the health visitor, taking certain risks was seen as the outcome of avoiding others; in this case those of over protection:

> Well part of you says you know, they've got to go out, they've got to do things on their own and I can't mollycoddle them the whole of their life... and you're torn between that and going completely overboard the other way... I've got a feeling that by over-warning children you make them less safe people (Ellen)

> ... there are parents who won't allow their children to go on slides or swings, there is that sort of fear I think - when do you let your children out onto the road? Yes, there needs to be some sort of balance [but] I don't think you can be over-cautious with tiny little children (Health Visitor)

Although these respondents talked about certain accidents 'just happening', there was a sense in which the space in which they happened was still calculated through an assessment of knowable risks. Real danger inhabited spaces in which risks could not be known (such as with other children) or when 'other' people had no apparent commitment to calculating risks. Even the astrologer, whose knowledge one might suppose belonged to an older age of pure fatalism, pointed out that 'modern' astrology was not tied to the fatalism of classical astrology. Unlike any of the other respondents, she commented that accidents were often 'meant' to happen, but in the sense that the event had some meaning or purpose, rather than merely that it was inevitable:

> If something happens to you, like... you accidentally bump into someone, there's a sense of synchronicity ... I remember my friend who was knocked over by a motorbike, she said afterwards 'I needed it to happen'. (Astrologer)

In explaining why accidents might happen at a particular time to a particular person, she explained:

> Well, I can only talk astrologically. Lots of people carry Mars in their seventh house, Mars being the planet of aggression. In the physical, real accidents; fire, explosions, violence... now if you're suppressing your Mars energy, more likely it's in the seventh house, which is the house of others, so in a sense it's you living out your aggression through others (Astrologer)

In classical astrology, she explains, the kind of accident one is likely to suffer is determined by a combination of dangerous signs in the stars; asphyxiation is associated with Mercury and Uranus, burns with Mars, whereas drowning is associated with Pluto and Neptune. The kind of accident is therefore not accidental:

> It is in your chart - you have that propensity, Martian people will usually get hurt in explosions, things catching fire, while others will be more prone to suffocation or drowning (Astrologer)

However, modern astrology, she notes, which is influenced by the ideas of Jung, appears to view the determinations of classical astrology as merely yet another risk factor to be taken into account:

> It's not used to predict. You can use it to see a propensity - to watch out for that energy within you. Old astrology might have said, you know 'beware when on the 14th of March, Uranus passes over Mars - you musn't touch anything electrical'. But I would just point out the propensity (Astrologer)

Fatalism, in short, is not what it was.

DISCUSSION

These interviews were not with a systematically selected sample, and are unlikely to be representative of the population of contemporary Britain. In particular, the interviewees were all urban residents at the time of the interview, and it possible that those living in rural areas have very different views of accidents and how they

can be prevented. In addition, the adults interviewed were largely from the professional social classes, in terms of their own or their partner's occupation, and they were all of working age. Again, an older or less socially advantaged sample may have very different views. In contrast to some of the findings here, Roberts et al (1993) report, for instance, that for their working class respondents accidents were seen as largely caused by environmental hazards, and their prevention was a matter of material improvement to that environment.

However, those interviewed did provide a range of possible views, and their accounts of accidents, what they are and how they coped with them provide some interesting clues to the status of the accident as a category of misfortune in contemporary Britain.

Both professional and lay people describe particular events as 'accidents' and utilise a working definition of accidents which suggests that they are random misfortunes which result from unmotivated actions. At the same time though, describing an event as an accident situates it as a morally negotiable event. Our designations of accidents are first tenuous - they serve as provisional explanations, pending more detailed investigation. This is clear in these everyday stories of accidents described above, in which events are analysed for precipitating factors and possible culpability. Like the fatal accidents discussed in the coroner's court, the accidents described by these respondents emerge from a moral investigation of an event. Stories about accidents are vehicles for reaching a consensus about proper responsibilities and the apportioning of blame. It may be that this consensus is contingent and local (as evidenced in the differing accounts of Roberts et al (1993)), but it is reached through shared accounts of accident stories and the exchange of opinions about culpability and what constitutes negligence.

Indeed there is some evidence here that knowledge about accidents and how to prevent them is used in everyday discourse to *construct* such sociological variables as class, gender and parenthood, rather than simply being an outcome of them. Ellen's comment to Sue (above) that her lack of a stair gate is evidence of 'terrible

parenting' is a joking insult to a friend, met with laughter in her audience, but it also perhaps indicates a more serious point. It is possible to make the comment, and for it to be taken as a joke, because the group is assumed to share a common knowledge of what proper parenting consists of (ie installing various safety equipment, not letting young children cross roads alone). Sue's lack of a stairgate is not a serious challenge to this local consensus, in the way that 'other people's' might be. Such 'other people' might include men, who were perceived as incompetent risk assessors in terms of their children's safety, but also might include those with fewer material resources, who might make different assessments about the necessity of equipment such as stair gates.

Similarly, several of the children's stories reveal a sense of coming to some shared consensus about responsibilities through telling stories about accidents and how they should have been prevented. In the children's stories accidents are the point of articulation for concerns about moral issues such as whether one accepts dares or not, or obeys adult injunctions against certain behaviours. Boundaries are drawn around various groups in terms of their balancing of risks; 'other' people are those whose criteria for assessing risks have either not been demonstrated (novice hill walkers) or found wanting (fathers, some teachers). Within the group, individual decisions may be challenged, but a shared rationale for coming to them is assumed.

The accidental, it was suggested in Chapter Three, provides a provisional explanation for that which is at the limits of rational explanation. Accidents, it seems, remain the remnants of our classificatory system in many ways - they are still the leftovers. This is why it is difficult to define the contents of the category. Its constitution is defined negatively: an event is accidental not because of any innate characteristics, but because it is <u>not</u> something else (a suicide, vandalism, child abuse). Inevitably, such definitions are provisional, since some other future verdict cannot be precluded and the designation is always, potentially if not overtly, in dispute. Both professionals and lay people use the same logic, that of exclusion, to create a provisional category of events which are 'left over' after

other possible explanations have been suggested, and to construct some accidents as 'preventable'.

However, the contemporary accident is not the result of unknown forces, or those for which there is no merit in seeking an explanation. There was no evidence here of specifically 'lay' beliefs in the random nature of accidents, or a belief that they were in general unpreventable. On the contrary, these respondents were highly conscious of risks and took many actions to prevent accidents happening, and as Ellen comments:

> It always strikes me as amazing how few accidents happen, because potentially there are an enormous range [of risks] (Ellen)

The astrologer, perhaps unsurprisingly, superstitiously touched the wooden table after describing herself as someone who was not accident prone. Most other respondents, though, also talked about luck when they talked about avoiding or suffering accidents. Davison et al (1991), in their discussion of lay beliefs about heart disease, note that the focus on 'risk factors' in health education may make such fatalistic beliefs more salient, as there is no other way of providing meaning for those events (heart attack or accident) that are not in any obvious way the outcome of a specific risk having been taken. However, the fatalism of these respondents did not appear to be a resigned belief about the unpredictable nature of the world, which nothing could be done about. Leroy was only person interviewed to persist in stating that 'accidents were a coincidence' and that therefore nothing could be done about them. His views were marginalised by his friends, who accused him of 'using them long words again' and of recklessly ignoring risks. For most, their 'fatalism' was specifically produced through the techniques of risk assessment.

First, the very multiplication of possible risks meant that almost all accidents in practice could be attributed to lack of attention to particular risks - even if only humorously, as in Ellen's example above of the advice to 'beware of outcrops of

granite!', or Amelia's ironic comment that the person who laid the tarmac could be responsible for her cycling accident. Such humour represents perhaps resistance to the dominance of risk assessment as a technology for making sense of accidents, but it also recognises the possibility that risks can, at least in theory, account for all accidental outcomes. In general, only in abstract or hypothetical ('we could all get run over by a bus tomorrow') cases did accidents 'just happen'. The only exception, perhaps was the actuary's example of being struck by lightning, the only unequivocal example he could think of where no blame would attach. A 'bolt from the blue', it seems, can only describe accidents which are literally just that - it no longer has any metaphoric utility in everyday discourse about accidents.

Davison et al (1991), in their account of knowledge about heart disease, suggest that fatalistic beliefs continue to co-exist with beliefs about the value of preventative action because they explain the distribution, rather than the incidence, of misfortune. Accidents, likewise, must be explained as personal misfortunes, and it was clear to those interviewed here that preventative logic was flawed as a deterministic way of understanding the distribution of accidents. If the outcome is serious, people need to understand why the accident happened to them at that particular moment, as well as understanding why that kind of accident happens in general. However, only the astrologer had an explicit theory that saw accidents as having a 'meaning' in a Freudian sense. Neither was fate, for other respondents, a significant factor in explaining the occurrence of misfortunes that were identified as accidents. It did, however, sometimes explain fortune - why certain people did not have accidents, despite the (potentially inexhaustible) range of risks that exist. Again, fate only explained the abstract or hypothetical accidents. In practice, the forensic examination of actual experiences resulted in responsibilities being attributed and meaning attached through the attribution of negligence or even, in some cases, motivation. 'Misfortune' often resulted from the (calculable) outcome of a balancing of risks: such as those of mountain climbing against the 'risk' of boredom, or those of allowing children to play outside against the 'risk' of over-protecting them.

The persistence of fatalistic beliefs appeared to be neither unequivocal evidence of the incomplete domination of other discourses, nor of resistance to those discourses. Rather, it could only be understood *with reference* to these other discourses; namely, those of risk and its management. The contours of 'fate' and 'luck' as explanations for the accidental, for these respondents, were understood through risk. To a large extent, fate could be (theoretically) calculated like any other risk factor for accidents.

It was suggested in Chapter Five that education may persist as the primary strategy for accident prevention, despite its relative lack of success, because it appeals to a risk management strategy in which preventative actions can be taken as talismans against misfortune, rather than as direct attempt to influence risk factors. In the stories about accidents told by these respondents, there is a sense in which safety was ensured by a knowledge of risks, and an expertise in managing them, rather than purely by direct attempts to reduce the causes of specific accidents. The health visitor, for instance, describes how she burnt her leg on holiday: an accident she seems to feel almost unfair, as she had demonstrated a basic knowledge of precautions that seemed in excess of her fellow holiday makers:

> ...We're on this tiny little motorbike up a mountain - we had a helmet, would you believe - we were the only people in Kos to have a helmet! [laughs], so we took that precaution - but we were wearing only shorts ... I didn't think it would burn me (Health Visitor)

The children's 'look, listen, learn' mantra, or the Green Cross Code that one mentioned, 'look left, look right and look left again', are seen by these respondents as inadequate because they reduce prevention to a general all-purpose technique for safety. Prevention in a contemporary risk society relies on a more sophisticated knowledge of risks, in which the boundaries of the predictable are calculable if not actually known. Danger resides not in 'fate' but from outside these boundaries - in those who do not calculate risks, and in those whose

particular vulnerabilities are not known. In Hacking's (1987) phrase, chance had largely been tamed, but in a local and a contingent way. Risk assessments were not absolute, and stories about accidents (the outcomes of faulty assessments) served as an local arena for the development of consensus about proper responsibilities.

CHAPTER EIGHT

CONCLUSIONS

Misfortunes are perhaps universal to human society, if ways of classifying them are not. This thesis started by noting that in late twentieth century Britain some misfortunes become classified as accidents and that there was nothing inevitable about how this classification happened. A diverse range of misfortunes are identified as accidents, from the trivial to the tragic. The trivial are the subject of considerable everyday conversation, whereas the tragic are the cause of much human misery, and have been identified as a public health priority. Although this suggests accidents as an important subject for sociological study, there has been rather little.

In order to explore some possibilities for a sociology of accidents, a range of methods have been utilised. They include: examination of written sources, such as the reports of the Registrar-General, writings from the seventeenth century and twentieth century accident prevention literature; observation of a coroner's court; qualitative analysis of semi-structured interview and focus group transcripts; the recording of everyday sources such as newspaper reports of accidents and folk wisdom. If accidents have been 'neglected' by sociology, with a few notable exceptions (such as the work of Figlio 1985; Tombs 1990,1991,1992 and Roberts et al 1992, 1993) this paucity of secondary sources was more than compensated by a wealth of primary data. Accidental misfortunes seem to provide an incitement to discussion and analysis, in both public and private arenas. Inevitably, only a small

part of the possible field of data has been utilised here, and there are many clues which have not been followed up, such as English legal cases of accidents, or the many popular media representations of accidents in television dramas and documentaries. Also inevitably, there are many sociological questions of importance which have not been addressed, such as those concerning the social distribution of accidental misfortunes, or the possibilities of a gendered discourse of risk and accidents.

The concern here has been with one particular question: what are the general rules by which accidents are socially constructed? Those clues that have been pursued to understand this question have suggested an important place for accidents as a legitimate subject of sociological enquiry. They are not only a pivotal category of misfortune in late twentieth century Britain, but also a blank slate, on which various contemporary cultural concerns (specifically, those about uncertainty, responsibility and culpability) are inscribed. These concluding remarks will summarise the argument and examine its implications for an understanding of these concerns in contemporary culture.

The arguments presented in this thesis can perhaps be summarised by first outlining the discursive shifts which have produced rather different spaces in which the accident has appeared, and by then tracing the relationship of the subjective experience of accidental misfortune to these different discourses.

The classification of misfortune: the place of accidents

Before 1650, an accident was merely a happening or an event, and there appears to have been no space in European discourse for the concept of an event which was neither motivated nor predictable. For Ward (1622), for instance, a universe governed by an omnipotent God precluded any category of misfortunes which

were inexplicable. In the middle of the seventeenth century, those shifts in scientific discourse analysed by Hacking (1978) and Foucault (1989) created new explanatory possibilities, based on evidence, deduction and statistical reasoning. These shifts (which were here characterised as the emergence of rationality) not only opened up a space for accidents, but perhaps also created them as a necessary category of misfortune. Rational explanation inevitably had its limits, in that there were remnants, the local and particular events which did not (at least as yet) fit into a pattern. For Graunt, analysing Bills of Mortality in 1662, such 'accidents' were explicitly omitted, as they promised little reward for a scientific explanation. By the end of the seventeenth century, Petty could confidently dismiss the accident as a despised explanation of misfortune. Rationality, then, produced a space for accidental events at the margins of its explanatory reach. The accident was both necessary, as such explanations could not be all encompassing, and despised, as the rational project was a comprehensive one, with a goal of exhaustive analysis.

In the middle of the nineteenth century, accidents are constructed in the statistics of the Registrar General through a specifically moral discourse. In demarcating accidents from other 'external' causes of death, Farr (Registrar General 1862) utilised moral content as the major axis of his classification. Today, accidents are still recorded as such through the medico-legal processes of a coroner's court, which constructs them not in terms of what they are, but in terms of what they are not. That is, a death is recorded as accidental because there is no evidence to suggest any motivation or moral culpability.

At the end of the nineteenth and beginning of the twentieth century, the emergent discipline of sociology is silent on accidents. As part of the rationalist project, sociology cannot construct the accident as a legitimate arena for research, as it is neither predictable nor motivated. However, in the early twentieth century, accidents do appear in European discourse, but in the literatures of anthropology and psychology. In rational cosmologies the accident (as a marginal, necessary and despised category), is a given, hardly worthy of note. However, it can therefore act as a marker of a self conscious modernity. As an inevitable outcome

of rational classification systems, it becomes visible by its absence in other classificatory systems; in the cosmology of pre-rational people, such as children or 'primitives'. A belief that some misfortunes are merely accidental becomes definitive of modernity. At this point there are also attempts to reduce the inexplicable margins of rationality; to reduce the number of misfortunes which are 'merely' accidental. Freud, for instance, argued that apparent accidents could reveal underlying rational motivations: they were not 'really' accidents, in that their occurrence could be explained. In this light, Figlio's (1985) description of the Workmen's Compensation Act of 1987 can also be seen as an attempt to define some workplace accidents as not 'really' accidents.

Until the middle of the twentieth century there continued, though, to be a space occupied by some misfortunes which were merely the result of coincidence and bad luck, and for which there was no profit in seeking further explanation. Accidents were an inevitable feature of a universe understood as obeying rational and probabilistic laws. This space was radically reconfigured in the middle of the twentieth century, when accidents became preventable. In Hacking's (1987) terms, this followed a 'probabilistic revolution', in which random events themselves became predictable through the erosion of deterministic laws and their replacement by the autonomous laws of chance. Here, it has been argued that a new space was opened up for accidents by the fracturing of the modernist consensus around rationality, and its explanatory power. Specifically, the emergence of a discourse of risks and their management produced the accident as a predictable, and thus preventable, misfortune. Accidents became both the archetypal outcomes of the mismanagement of risk and, at the same time, the paradigmatic events upon which to demonstrate the success of new techniques. From the margins of an explanatory system, they move to the very centre. Accident prevention became possible as a discrete professional activity when accidents were reconfigured as the outcomes of identifiable and calculable sets of risk factors, which could be manipulated by the potential accident victim, rather than as inevitable events which were to be expected from time to time.

These discursive shifts have not necessarily been uniform. In some senses, the operation of the coroner's court was seen to be a tension between a modernist discourse evident in the formal guidelines for coroners, in which the accident was a given, defined only in its relation to other, more culpable deaths, and the rather more contemporary needs identified by the Broderick report, which suggested that the 'moral' function of the court be abandoned in the interests of accurate record keeping. However, it was seen that accidents come to be classified as such through a moral enquiry, in which the court still produces fatal accidents (and therefore fatal accident rates - the very raw material of much risk analysis) as the 'left-overs' of medical nosology. A similar tension is evident in the only partially successful attempts by the medical profession to utilise a new vocabulary for accident research, centring on injuries, hosts, vectors and energy transfers. These attempts are undermined, perhaps, by the continuing appeal to the accidental as marginal category for the as yet unexplained.

The subjective experience of accidents

Most accidents are misfortunes. This study of accidents started with a working definition which suggested that a heterogenous class of misfortunes become classified as 'accidents' because they are experienced as both unmotivated and unpredictable. The ideal accident is a happening with unwanted outcomes (such as injury or material damage) for which no one can be blamed, as no intention was involved, and which could not have been expected at the particular time and place at which it happened. This ideal is appealed to in the anthropological and psychological discourses of the early twentieth century as one which is uncontested: only the child or the primitive would seek moral or causal explanations for accidental misfortunes. The accident, it is implied, is experienced as an inevitable misfortune which little can be done to prevent.

However, in the late twentieth century this ideal is rarely realised in practice. In the process of the coroner's court and in everyday stories about accidents, for instance, such a definition operates only in the abstract, or to describe hypothetical events. At its logical extreme, a discourse of risk undermines the very existence of accidents in this ideal sense in two ways. First, a growing sophistication in the mapping of potential risk factors makes all events predictable and ultimately preventable. Second, as responsibility is divorced from motivation, all victims of accidents are potentially culpable. Culpability arises not from the motivations of the victim or other agents, but from their ignorance or miscalculation of risks. Risks are the translations of population statistics (the numbers of fatalities or injuries correlated with specific factors) into individual behaviours, such as awareness of climate when mountain climbing, or cycling only with a helmet, or installing guards over electric sockets in the home. As risk management has been, in O'Malley's (1993) word 'privatised', we are all responsible for the surveillance and management of our own risk environments, and held culpable for mismanagement.

An illustration of the different implications of the new regime for the experience of accidents lies perhaps in the comparison of two superficially similar works: Graunt's (1662) observations of the Bills of Mortality and the BMA Guide to Living with Risk (1990). Just as Graunt described his project as one of enumerating the risks of death from various causes so that people could 'better understand the Hazard they are in' (Graunt 1662:16), the BMA suggested that one purpose of their guide was to 'put risk in perspective, and to put numbers on a selection of risks as far as possible' (BMA 1990:xvii). Here, however, the similarity ends. Graunt's faith in rational analysis is a reassuring one: that further knowledge will correct misconceptions, and that the quantification of that knowledge will lead to greater social justice. His statistical analysis leads him to various suggestions for the improvement of society: that, for instance, beggars should be kept by the State (Graunt 1662:19). The BMA guide is, on the other hand, profoundly unsettling. 'It is not' the authors point out 'possible to make choices for people' (BMA 1990:xviii). People must instead make their own

choices; but from a vast array of possible risks, which must be quantified, understood and balanced. There are, note the authors, 'few things that are certain in this uncertain and complex world' (BMA 1990:xv), and the range of risks to worry about is enormous:

> One might ask, how might it affect me if a nuclear power station was built nearby, rather than a coal-fired one? If I collide with that car over there, would I be safer in it or my own? ... How often does someone check the brakes of the train I am travelling in tomorrow? (BMA 1990:xv)

Transport, food, leisure activities, work and medical care all involve sets of risks which have been studied and reported here. In a world in which 'experts' are no longer trusted to make decisions, risk assessment is an individualised activity, in which all must constantly engage. The implications for those who suffer accidents are rather bleak. Modernism provided no solace in terms of meaning for an accidental misfortune beyond that of mere coincidence, but implied a certain sympathy for the victim. The accident as an outcome of mismanaged risk is a misfortune which should never have happened in the first place.

Towards a sociology of accidents

If accidents have been brought to the centre of contemporary discourse, they have in part been dissolved in the process. An accident (an unpredictable event for which no-one can be blamed) can, in theory, no longer happen. The very act of analysing accidents disperses them: epidemiological aggregation and risk analysis renders them predictable, respondents in interviews question their original classification of an event as 'accidental', and public debate about coroners' verdicts uncover culpable agents. This may be why the misfortunes which do get

provisionally categorised as accidents appear as a blank slate, upon which a range of other concerns get written. The accident in late twentieth century Britain is a vehicle for talking about some key cultural concerns, particularly uncertainty, responsibility, and culpability.

It has been suggested that as a society we are becoming less capable of accepting uncertainty and risk (Fox 1980), and more likely to attribute blame to others for our misfortunes (Douglas and Wildavsky 1983). In one sense, the findings reported here might qualify these interpretations, as technologies of risk and its assessment provide a wealth of strategies for coping with uncertainty, and for 'privatising' responsibility for the outcomes of uncertainty, rather than merely blaming others. Although respondents in interviews did sometimes seek to lay responsibility elsewhere for accidents, they accepted personal responsibility for mapping the risks that they faced, which included assessing others' abilities to balance risks on their behalf. Engaging in action that was seen as 'preventative', such as wearing a motorbike helmet, or learning about the risks of mountains, or installing a stair gate, offered, for these respondents, a sense of control over a risky environment. Although it was recognised that there were logical limits to the effectiveness of an accident prevention enterprise, such action served in a social way to demonstrate that proper responsibility had been taken, and that they 'had done all they could'. The manipulation of risk factors has been described here as a talismatic activity, in that it is concerned not with removing the known causes of unwanted effects in a deterministic way, but with the demonstration of adherence to and faith in the possibilities of risk management.

Accidents, within a rational discourse, were a partial answer to the question of culpability, for if a misfortune was an accident, no one could be blamed. In contemporary Britain, it has been suggested, responsibility and culpability have been divorced. Significantly, Freudenburg (1993), suggested a concept of 'recreancy', which described a loss of faith in experts, which is unconnected with motivation. For Figlio (1985), the emergence of negligence was central to the appearance of accidents as a class of misfortunes, as it engendered the notion that

responsibility could be held by those who did not intend harm. However, it was suggested here that this is not quite adequate, as some misfortunes which are classified as accidents are not about negligence, or if they are it is a rather more general kind of negligence, rather than one arising from specific contract relationships (for instance parent's feelings of responsibility for all children's accidents, despite the lack of any recognisable negligent action on their part) and negligent acts were sometimes contrasted to accidents. Negligence, like 'fate', is merely one more risk factor to take into account, and another potential element in the forensic analysis of accidents in order to attribute responsibility. Rather, it seems that accidents are the point of articulation for debates around the relationship between blame and responsibility.

In the introductory chapter, it was suggested that to label an event as an accident implied a paradox. On the one hand, it suggested that the outcome was no one's fault, so there could be no moral culpability, on the part of the sufferer or the agent. However, some people were seen to 'deserve' accidents. As has been evident in this study, accidents come to be defined through a process of moral interrogation, formally in the coroner's court, less formally in the everyday social interactions in which accident stories are told and discussed. The accident is the outcome of such negotiation, but is also the vehicle by which these issues are constructed. Thus, a 'proper, responsible parent' is one who installs safety equipment and makes sure their children wear a cycle helmet, and stories about accidents are a forum for the social production of this knowledge. Likewise, the stories children tell about playground accidents are an arena in which a local consensus is reached about what kinds of children should take dares, or in which situations parents can be disobeyed.

In this way, social knowledge about accidents is rooted in social knowledge about everything else. As a category of misfortune, the accidental is rather elusive, for it is not easily wrenched from the field of discourses which produce it: particularly those of risk, uncertainty, responsibility and culpability. It disappears under close scrutiny because accidents are inevitably only provisionally labelled. Risk,

uncertainty, responsibility and culpability are key cultural concerns in the late twentieth century and the analysis of the social construction of accidents forms a crucial point of entry for understanding how they are articulated in social interactions.

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